

GIFT
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THE VETERINARY RECORD

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ROUTINE TREATMENT.

Towards the close of the recent discussion in London upon equine influenza, Mr. W. R. Davis said, "If we suspect influenza we ought not to phylacogen the horse, or nuclein him, or ammonium carbonate him as routine treatment."

This amounts to a condemnation of the practice of invariably relying upon one drug or line of treatment for this particular disease. It is perfectly just; and it could be applied with equal justice to the treatment of a great many other diseases. All practitioners will agree with this as a general truth—we all recognise that few diseases can always be satisfactorily treated if one unvarying routine is followed for each case. But it is a question whether, even at this time, some of us are not still too apt to yield to the seductions of routine treatment in our practice.

In human and veterinary medicine alike, the temptation to work by routine treatment is one of the great perils that beset the general practitioner. In both, the temptation is greatest in busy practices; and there is no branch of our work which better illustrates it than the treatment of large studs of working horses. The one advantage of routine treatment is obvious—it saves time and trouble to the practitioner. Its disadvantages, not being so patent, are apt to be forgotten; and so the clinician allows the practice to grow upon him. Carried to extreme, it simply means the adoption of an invariable treatment the moment a name is found for the disease, with no regard for any individual peculiarities of the case.

Few men, perhaps, push it so far to-day; but there was a time when routine treatment of this sort was very common in veterinary practice, and we have not yet altogether outlived it.

Colic is a good example of this maltreatment in the past. Colic is not a disease—it is a symptom of a great variety of diseases requiring very diverse treatment. Yet there was a time when the average practitioner usually treated every case of colic by his own particular routine, which admitted of little variation. Much the same could be said of other diseases—the tendency was to treat each disease by rule according to its name, and to neglect the systematic judgment of cases on their individual merits. We all recognise the evils of such a system now—we all know that, even if a routine treatment is a good general one, a slavish adherence to it is bound to lead us wrong sometimes.

We should be upon our guard—especially in busy practices, and perhaps most of all in dealing with such epidemics as influenza—against allowing ourselves to drift back towards such an adherence.

THE WILLIAM HUNTING MEMORIAL FUND.

The time fixed for closing this fund is approaching, and a meeting of the General Committee is announced for the evening of July 6, at the Royal College of Veterinary Surgeons. It is both necessary and desirable that the attendance at this meeting should be as full as possible—several questions of the first importance will be down for discussion.

We learn that there are promised donations still outstanding, and that it is probable that several members who intend to contribute have not yet done so. *Tempus est.*

It has been hoped from the commencement that the Memorial would be widely subscribed: and but for the national trouble there is little doubt that it would have been even more widely supported than it is.

A.V.S.—A CONCESSION.

It is announced that members of the veterinary profession belonging to the Civil Services, *i.e.*, the Board of Agric: the D.A.T.I. Ireland: the Indian Civil Service, etc., with five years service will, on joining the A.V.C., be given the rank of Captain.

CATARACT IN THE DOG.

By HENRY GRAY, M.R.C.V.S.

The dog may be affected with the various kinds of cataract found in man. In consequence of his widely dilatable pupil, cataract is detected even without the ophthalmoscope or the aid of atropine more readily than is the case with man, with his small pupil.

There is one phenomenon in connection with cataract that has not, so far as I am aware, been pointed out in veterinary ophthalmology. It is the presence of a reddish pupil in a partial or an immature cataract which allows a certain amount of light to pass through the lens. This reddish pupil is more noticeable when cataract affects only one lens. It is not observed in a mature diffuse cataract, but reappears when the opacity commences to disappear after discission and to allow a certain amount of light to reach the fundus of the eye. It is also not observed when the cataract is in the centre of the lens and the pupil in a state of miosis, so that no light can reach the fundus.

This reddish reflection of the optic disc with its reddish vascular network is witnessed in anterior polar cataract resulting from a central perforation of the cornea in cortical cataract, etc.

It must not be mistaken for the reddish pupil observed in albino and in chocolate-coloured dogs.

It is best observed when a dog is someway back in a darkened room facing the window (especially a high one) and the observer, who has his back to the light. It may, however, be seen in other positions.

As in man, cataract is hereditary in the dog; it may occur in many members of the same strain or family. Its incidence may follow the law of Mendel. The poodle seems to be notoriously subject to it; in my experience more than any other breed.

Cataract is sometimes associated with epilepsy, or epileptiform convulsions. This is so in the case of lamellar or zonular cataract. The anterior polar cataract arising from perforation of the cornea is always associated with a central corneal opacity.

Provided the opaque lens has not undergone the hardening process, cataract is better remedied by dissection than by extraction. Couching is not advisable, because the lens sometimes passes into the anterior chamber, or wanders to and fro the posterior chamber *via* the pupillary orifice, and thus sets up irritation of the posterior lining of the cornea, inflammatory reaction, opacity of the cornea and, occasionally, hydrophthalmos.

CORRECTION.

In the article on "Trichiasis" which appeared on p. 648 of our issue of June 26, line 8 of first paragraph, instead of "temporal third" read "nasal third."

CASTRATION.

Mr. Parker's experiences of castration, in last week's *Record*, were most interesting, especially coming from a man who has had experience of the standing method and has found it not altogether satisfactory.

After some years of casting colts and using the hot iron, I felt this was not a very scientific way of operating, a lot of strength and pulling about being required; I then took to the standing method, but found some well-bred and thro'-bred colts impossible to do—usually owing to their throwing themselves down when the testicle was out of the scrotum, and one felt very small in front of on-lookers; with a nasty feeling in oneself of failure. In this method clams were always used, requiring a second visit, which was often very inconvenient and rarely repaid one for the time expended.

Above all, the pain shown by some colts—though certainly not all, by any means—made me think that there must certainly be some better plan, for to see the way some colts draw their backs up, or crouch down, some of them squealing, with on rare occasions a blood-curdling screech, made me think that all was not well.

I have ventured to give chloroform standing with a Carlisle muzzle; but this is a very uncertain way, for the muzzle will not fit, and allows too much air; it is so heavy and cumbersome that I had a leather muzzle made very similar to a Coxe's, that goes into the mouth and ties round top jaw. When this is on and leg strapped up, a wad of cotton wool soaked with two ounces chloroform is inserted, and the bottom of muzzle tied up. It is best to do this

in a grass field, the colt being held by one line on halter. In three to five minutes the colt goes down, when the top hind leg is pulled up with a rope going round neck. Next, the scrotum and skin are painted with Tinct. Iodine, and in a minute or two the testicle is let out and removed with éraseur, always crushing the cord slightly first; then lower the éraseur on the cord about half an inch, and gently crush through. Should cord be very large, or varicosed, an extra crush is advisable. The muzzle can usually be taken off when second testicle is being removed.

The advantages, I believe, for this method are: (1) a painless operation; (2) only one or two men are required; (3) one cannot be beaten by a colt; (4) colts rarely swell; no twitch required, and one can hardly see they have been operated upon. Here I may say the éraseur is sterilised before use; the cord and inner surface of scrotum are not touched by the hands. (5) There is not the feeling of physical fatigue—it is unnecessary to take one's coat off. (6) Hæmorrhage I have not experienced. (7) The method seems to find great favour with owners. (8) Last, but not least, it assists the Day book.

GEORGE ELMES, F.R.C.V.S.

ABSTRACTS FROM FOREIGN JOURNALS

SOME FRENCH EXPERIENCE OF MALLEIN.

In various countries, especially in Germany and Russia, the mallein reaction has fallen into much discredit of late years. Other countries still believe in the efficacy of mallein; and the French veterinary surgeons, in particular, have always defended it. Mouilleron, one of the veterinary surgeons of the Omnibus Society of Paris, has published his observations upon the subject, which, in view of the large experience he has had, are of very high interest.

Mouilleron, from January, 1898 to 1913, has carried out more than 42,000 mallein tests. He has not encountered a single positive error—that is, all the animals which have reacted positively (and which have been slaughtered without exception) have shown post-mortem glanders lesions fully confirming the verdict of mallein. He has observed only five negative errors—that is, five horses which gave no kind of reaction to mallein, but which yet proved to be glandered.

For twenty years Mouilleron's method of applying the test has differed from that advocated by many veterinarians. He does not apply it to horses *en masse*, but limits its application to suspected animals alone. This limited application has succeeded in clearing the stables of glanders and guarding against new attacks.

Mouilleron, on the ground of his long experience, concludes that, of the three reactions of the mallein test—local, thermal, and general—the local reaction is the most valuable. Hyperthermia has only a very relative value. The thermal reaction alone, whatever its degree, should only be regarded as an

accessory symptom, and is insufficient to justify the slaughter of the animal.

Certain breeds, especially foreign ones, show a special sensitiveness to mallein. Drouin, since 1903, has tested large numbers of horses bought in Hungary; and has found that from 30% to 40% of these animals presented typical thermal reactions to mallein, as if they were glandered. Subsequent examination of the animals, and subsequent tests, proved that they were healthy.

The local reaction is more valuable; and in itself according to Moulleron, it suffices to diagnose glanders. For a positive diagnosis, it is not necessary that the local swelling should be voluminous, hot, painful, and with prominent lymphatics. It is sufficient that it exists—rather large, thick, and well diffused—and that the sensitiveness of the part is exaggerated.

The general reaction has less value; it may be completely absent in glandered horses. It is never absent in acute and sub-acute forms of glanders; but in chronic cases, it often depends upon the character of the subject. Finely bred animals always show the general reaction clearly; but those of lymphatic temperament are little or not at all affected.

Moulleron's work forms an additional confirmation of the truth that the so-called failures of mallein are due, not to mallein, but to faulty interpretation of its reaction. The mallein reaction, in fact, is an *ensemble* of clinical phenomena, the interpretation of which is delicate, and which should be judged as a whole. Contrary to what was once believed, the thermal reaction alone should always be doubted, and greater reliance should be placed upon the local reaction.—(*La Clinica Veterinaria*).

W. R. C.

REPORT OF THE VETERINARY DEPARTMENT, GOLD COAST, FOR THE YEAR 1913.

The staff sanctioned for the year was one veterinary officer, one veterinary dispenser, two dispenser pupils, and one fifth grade clerk, being an increase of one dispenser pupil.

The veterinary officer was absent on leave from the 29th August to the close of the year, during which time the veterinary dispenser, Mr. J. B. K. Quansah, was in charge of the department.

The approved estimates for the year sanctioned an expenditure of £1,207, apportioned as follows:—Colony £310, Ashanti £597, Northern Territories £300. The approximate expenditure was £970, thus showing a saving of about £237 on the estimates.

The revenue collected from kraal fees amounted to £351 11s. 6d., an increase of £78 0s. 6d.

The veterinary offices have been completed; they consist of an office, store, dispensary, and a laboratory. We have commenced to clear the surrounding land, this necessitates cutting down the dense bush and stumping the land for the planting of dhoo grass for the grazing of our own experimental animals.

Cattle Breeding.—The indigenous cattle of the Colony, Ashanti and Northern Territories Protectorate is a small, extremely hardy and thrifty animal without a hump. Crosses with the Zebu or Moshie cattle are to be seen in a few villages of the Northern territories, but they are not many and are not liked by the native cattle raiser. On inquiring amongst the Mahomedans

(who are the oldest traders in this country) they state that this indigenous breed is the Grunshie cattle. In certain districts the cattle are much smaller in size, no doubt due to certain hardships as scarcity of water and also to a haphazard form of breeding, as in-breeding and service by immature and weedy bulls. The cattle certainly are larger in districts where attention is paid to castration. Again in certain towns the calves are liable to be starved so as to supply a milk demand.

Cattle Keeping.—All the natives keep their cattle in the open day and night. In the early morning they are driven out to graze, and about 2 o'clock in the afternoon they are taken to water. In the evening time they are driven home. There are three methods adopted for keeping them together at night. In the Gaman and Banda districts each animal is taken to its owner's compound where the animal is hobbled by a fore-leg to a stake driven in the ground. In the Dagomba country the cattle are pierced through the nasal cartilage where string is passed through, and they are tied up with this to a stake in the ground. When either of these two methods is adopted young boys, sons of the owner, are the herdsmen.

The other method is kraaling either in a stockade or in a swish kraal. Where this is practised the herd is generally a large one. One man in the village is in charge of the herd, and supplies the herdsmen and kraal accommodation. There are various ways in which he is remunerated, the commonest is, he receives one calf in every four born.

The cows calve regularly every year, no assistance being needed. The calf during the first three months of its life is generally tied up at home, whilst its mother is out grazing for the day. When the mother is driven home in the evening, the herdsmen hobbles the hind legs and proceeds to milk her to supply the demand, and when he has stripped the udder of a certain amount, the calf is allowed to suck. The calf remains with its mother until day-break when milking is again carried out. Some alteration in the method of keeping occurs during the wet season, the cattle during this period are not out at grass the whole day, they graze around the village. During the dry season certain villages in which there is a scarcity of water move *en bloc* to where there is a plentiful supply; this occurs on the road between Daboya and Tolon in the Dagomba country.

Driving cattle out graze is the principal method adopted for feeding. The natives have no idea of making hay nor do they give their cattle corn. Some breeders in the Grunshie and Kanjarga countries feed their cattle on the dried tops of the ground-nut or peanut after they have harvested the nut; this makes excellent hay.

Watering is done from rivers or from ponds. Water is one of the greatest difficulties that has to be contended by the breeders. This especially applies to the Northern territories and the Addah district.

Sheep Breeding.—Sheep breeding is carried on in nearly every village of the Colony, Ashanti and the Northern territories. Large flocks are not kept, but practically every householder keeps three or four sheep.

Three breeds have been recognised:—Grunshi sheep. This breed is said to come from the Grunshi country. It is a very small sheep and produces a short fibred wool; its colour is black and white or pure black.

Moshi sheep from the Moshi country. They are a little larger than the Grunshi breed, and are white "haired" sheep. The male generally has a small crest of long hair, and also long hair from the space between the lower jaws to the breast.

Hausi or Fulani sheep are larger than the others, long legged and "haired," and possess two long tassels hanging down from under the throat, the predominating colours are mixed; red and white, or black and white, but pure white are frequently seen among the males. A

few sheep of this breed are to be found at Accra, where they are called Lagos sheep.

The Grunshi and Moshie breeds are hardy and vigorous and do well in the forest country, where their principal diet consist of leaves. The Hausa or Fulani breed has no stamina, and does not thrive in the forest country.

Poultry Breeding.—The native fowls of this country kept by almost every householder, is a small hardy bird of almost every colour, with the game features and characteristics predominant. They are kept and reared by the natives for their own use and for the market. They can be readily improved, and answer well to the introduction of European blood. The best crosses are with the game and Orpington (buff or white).

Several pure bred English birds have within the last two years been imported into Coomassie, and we have had a chance of watching experiments with them and their crosses. The natives of Coomassie have seen these experiments and have realised what can be done. They are keen on buying English eggs and will give sixpence a piece for these eggs.

Turkeys do well, in fact they grow bigger here than they do on the coast. Those that are found here are descendants of birds obtained from the coast. Ducks thrive splendidly and breed rapidly. Pigeons: Wherever there is a Zongo (a Mahomedan settlement) pigeons are bred. They breed rapidly.

Poultry breeding on a large scale around any large town where there are over 50 Europeans, would pay any native to adopt as a means of livelihood. Eggs are a penny each, fowls 1s. 6d. to 2s. 6d. each, ducks 2s. to 4s., turkeys 6s. to 12s.

Cattle Trade, Coomassie.—There has been a marked increase in the trade done in cattle. This especially refers to the trade from the French Soudan north of the Northern territories.

The average price per beast can be safely placed at £5. There were 14,063 cattle imported into Coomassie; this represents a local trade of £70,315, an increase of £21,076 over the trade done last year. About £2,461 was paid to the local brokers as fees.

There was an increase in the trade of unhumped cattle, these are readily purchased by the Ashanti butchers who prefer them to the Zebu cattle.

All cattle imported into Coomassie passed a veterinary inspection, those that are passed are kraaled in the Government kraal, a small fee of 6d. per head being charged for the inspection and use of the kraal. The number of the cattle presented for importation was 14,122, of which 14,063 were passed. This is an increase of 3,121 over the number imported during 1912. The number of cattle quarantined was 59, 34 of which died within the twenty-four detention. They were quarantined for pleuro-pneumonia, advanced trypanosomiasis, extreme emaciation, and fatigue.

A table shows in detail the number of cattle imported compared with previous years. The totals are:—1911, 8651; 1912, 10,942; 1913, 14,063.

There are no statistics kept by this department of the number of sheep and goats imported into Coomassie. There were no complaints from the butchers on the scarcity of sheep and goats for killing for consumption. We believe that there has been an increase in the number of sheep and goats imported, but it is difficult to estimate the number. The price of a fair size live sheep is about 15s., this was the prevailing price throughout the year.

During the year 5,505 head of cattle were inspected for exportation, and out of this number 50 head were rejected. The number inspected and passed for exportation by railway was 3,620, an increase of 382 head over the number for the year 1912. The supply of cattle trucks during the year has been better, which may account for the increase.

The number inspected and passed for exportation by road was 1835. There were slaughtered in Coomassie 4681 head.

Hide, Skin, Bone, Horn and Hoof Trade.

Coomassie has become an important hide market, hides come in from the Moshie country, Ivory Coast, Northern territories, and also from stations down the railway. The local trade more than doubled itself in 1913 by some 8197 hides. In 1912 there were 20,370 hides exported from Coomassie, this year the returns sent in show 48,567 exported. The trade done in 1912 was valued by us at £9,166, we value this year's trade at £24,283. The heaviest sun-dried hide sold turned the scale at 30 lb.

The number of sheep and goat skins exported from Coomassie was 2459, an increase of 1471 skins over the number exported in 1912. There must be a local demand for these skins, otherwise more would be exported.

As mentioned in last year's report there was one consignment of horns and hoofs made during the year. The result of the experiment came to hand during 1913, the firm making the export only just cleared expenses.

Veterinary Inspection, Coomassie Town.

Mr. Quansah, who has the powers of an Inspector of Nuisances in matters dealing with domestic animals, made 58 inspections in the town and Zongo, as a result 88 sheep and 38 goats were seized for scab, 43 dogs for mange. Of these:—14 sheep, 13 goats, and 19 dogs were killed as incurable.

Clinical work.—The clinical work of the department consists of the diagnosis and treatment of all sick animals and poultry free of charge.

The number of horse cases treated was 155, giving 2,213 days on the sick list. This means that there was an average daily attendance of about six horses. Of these 133 were discharged as cured; 15 were destroyed as being beyond hope of recovery, and there were seven deaths. During the year one horse was placed under chloroform.

Trypanosomiasis again is responsible for the heaviest mortality (6).

The number of cases treated among domestic animals, other than horses, were 99, of which 80 were dogs, 1 cat, 17 fowls, 1 turkey; of the 43 cases of mange in dogs, 19 were destroyed. Others destroyed were 2 epilepsy, 1 trypanosomiasis; the remainder are returned as cured.

Farriery.—The shoeing records show that there were 1164 shoes put on during the year, this is an increase of 511 over the previous year's number. The two men of the constabulary who commenced the training in November, 1912, completed their course in April, 1913.

Northern Territories Constabulary.—During the year, the constabulary horses at Tamale were inspected by me. These horses are the private property of the men, and the Government allows each man who is on the mounted strength £1 per month for upkeep. There is a vast improvement in the horses both in conformation and size, which does credit to the selection of the Commandant and Assistant Commandant. Particular attention was paid to the mouths and backs, and there were no cases of sore mouths or backs. With the exception of two lame horses, which were not on the mounted strength, all were in a fit condition for service. The stables consist of two rows of loose boxes, the walls are built of swish, and the roofing is of grass, each loose box is large and roomy.

I made inspections at the Accra slaughter-house and saw one case of bovine pleuro-pneumonia, one case of necrotic liver, two cases of measly pork, and one case verminous broncho-pneumonia.

Out of a calendar year of 365 days for the year 1913, I spent 241 days residential tour. Of these 241 days I

was 76 days travelling on inspection and investigation. The balance of 165 days were spent at headquarters.

Mr. Kaye, dispenser pupil, spent 65 days travelling in the north-western portion of Ashanti and in the Southern Province of the Northern Territories Protectorate.

Contagious and Infectious Diseases.

Anthrax.—One horse was suspected to have contracted this disease and was shot.

Contagious Bovine Pleuro - Pneumonia.—Two outbreaks occurred during the year.

Piroplasmosis.—Blood smears from cattle killed in the slaughter-house, and from cattle in our kraal show *P. bigeminum* and also a mixed piroplasmosis.

Septicæmia Hæmorrhagica of cattle or Pasturellosis bovis.—Five cases of this disease occurred during the year. One case was found moribund in the Government kraal, one in the quarantine pound, and three cases reported dead in a swamp. A bacillus of the fowl cholera type was found in three cases. The other two cases were diagnosed by post-mortem, they were of the pneumonic and abdominal form, microscopic examination of the blood of these two cases showed a mixed flora of bacteria.

Fowl Cholera.—An epidemic of this disease occurred among the fowls belonging to Mr. Coke. The healthy fowls were segregated, and the diseased ones were treated by Mr. Coke. The majority of the diseased ones died, but several recovered.

Tetanus.—One case of tetanus was observed in a horse at Coomassie. This animal was treated and recovered.

Trypanosomiasis.—In the annual report for 1912, we described our treatment of this disease. The procedure for this year has been practically the same. The orpiment has been given in a ball instead of a drench, doing away with the tedious process of drenching. We have been asked why we repeat our injections of atoxyl at the eighth and ninth day, i.e., on the sixth and seventh days after the first two injections, and not at the eighth or tenth day. Our explanation is this:—We have treated numerous cases of this disease and have kept temperature charts, and thus have been able to notice that there is a critical period encountered every fifth to eighth day which is shown by a rise of temperature. In some horses it is every fifth day, in others sixth, seventh or eighth, this, we think, is controlled either by an idiosyncrasy of the horse, or by the strain of trypanosome. Therefore we advise a period of five days to elapse before repeating the next injections.

Another question we have been asked is:—Are those horses that are discharged as cured, cured permanently? This question can only be answered in the negative. Our treatment is carried out so as to help the cells of the body to overcome the trypanosomes and their toxins, and thus establish a certain degree of immunity. In the course of the treatment millions of trypanosomes are killed, and those that survive are rendered useless for the time being. When this stage has been reached the horse commences to put on fat and the temperature comes down to normal, and finally is discharged and performs useful work. Although cured, I have evidence to state that these cured horses harbour living trypanosomes in their blood stream.

There were 15 cases treated at the Coomassie Dispensary, of which nine were discharged as cured, three were shot as no recovery was anticipated, and three died.

Entomology.

Three species of tabanidae were caught in the north-west of Ashanti, these specimens were given to Dr. J. J. Simpson, travelling entomologist, who took them home and had them identified by the Imperial Bureau of Entomology.

Tabanus besti, Surc., caught at Tekiman.

Tabanus kingsleyi, Ric., caught at Ofinsu, Tanoso, and Tekiman.

Tabanus marmorosus, Surc., caught at Sampresu, Tekiman, and Nkwansia.

Helminthology.

The commonest trematode worm found in horses in this Colony is a fluke known as the *Gastrodiscus ægyptiacus* (Sonsino), I estimate that 75% of the horses here possess this fluke. They are easily killed or expelled by the use of male fern, linseed oil, and aloes. Their predilection seat is the cæcum and large colon, in which situations they are to be found adhering to the mucous membrane.

The fluke possesses a cylindro conical neck about 2 mm-3 mm long, the body is flattened into an elliptical disc, the ventral surface being concave and studied with numerous tubercles, each of which is supplied with a sucking disc, the dorsal surface is convex and smooth. Its length is from 8 mm-15 mm, its breadth is from 6 mm-12 mm. Its colour in its natural state is pink, becomes white when immersed in alcohol or in a solution of equal parts of a 1% saline solution and a saturated solution of perchloride of mercury. When acted upon by an anthelmintic and passed out in the dung, its colour is from brown to green.

The specimen was prepared in the usual way adopted for trematodes. Washed in a 1% saline solution to which was added an equal part of a saturated solution of perchloride of mercury so as to kill the fluke. It was then washed in distilled water to get rid of the mercury. It was then placed between two slides and pressed out by careful pressure. The slides were held together by a rubber ring being passed round at each end of the slides. The slides were then placed for about three days in a jar containing distilled water to which was added about 20 drops of hæmatoxylin to the colour of port wine. The slides were then taken out and the rubber rings slipped off, and the specimen taken up and decolorised for about two minutes in a 1% acid solution. It was then blued in running water. Dehydrated in the following rotation, passed through 70% alcohol, 90% alcohol, and then into absolute alcohol. It remained in this for about three hours. It was cleared, placed in creosote for about 24 hours, until one could easily make out the different internal organs. It was taken out of this, the excess of creosote taken off with blotting paper, then mounted in canada balsam between a slide and cover glass.

WM. P. B. BEAL, Veterinary Officer.

The Honourable,
The Principal Medical Officer, Accra.

Tenant's right to kill Rabbits.

A case was heard early in June in the Judiciary Appeal Court, Edinburgh, in which James Duncan, Polquheys Farm, New Cumnock, appealed against a conviction in Ayr Sheriff Court on a complaint by Alfred Crawshaw, Lochside, New Cumnock, of having trespassed in the day time of Saturday, 30th January, on the farm and lands of Lochhill in search or pursuit of game or rabbits contrary to the Game (Scotland) Act, 1832.

The Court held that the Sheriff-Substitute was not justified in convicting the appellant, who was found entitled to expenses modified to ten guineas. The following is the opinion, given in full, of the Lord Justice-General:—

"My Lords, this is a prosecution under the Day Tresspass Act. The appellant was accused of trespassing upon a certain farm named Lochhill in pursuit of game, and he urged two defences to the charge. The first was that he held the permission of the tenant of the farm to

shoot rabbits on the occasion in question, and that the tenant of the farm had a common law right to kill rabbits, which he was entitled, if he chose, to impart to appellant; and second, he urged that he held, under the Ground Game Act, 1880, the permission of the tenant to kill rabbits, and that, on either or both grounds, he was entitled to be free. Now, the learned Sheriff-Substitute has found against him on both counts. I am of opinion that he came to a right conclusion on the defence stated under the Ground Game Act of 1880, but to a wrong conclusion upon the leading defence—the first defence—namely, the common law right of the tenant of the farm to shoot rabbits under which he sought to shelter himself. I do not understand that the Sheriff-Substitute had any doubt whatever that the appellant held the permission of James Weir and that James Weir was the tenant of the farm of Lochhill, and that the farm of Lochhill was one on which it was customary—it was an ordinary agricultural operation—to kill rabbits. But he refused to sustain the defence, as I understand, on the ground that the shooting of rabbits by the appellant, on the 30th January, 1915, was not necessary for the protection of any crop. I think that was no answer to the appellant's contention. To say that, on a particular day it was not necessary for the protection of any particular crop to shoot rabbits does not in the least degree infer that the tenant was not entitled to shoot rabbits as an ordinary agricultural operation for the protection of the farm.

The law is laid down, I think, with admirable clearness in the opinion of the Lord Justice-Clerk (Moncrieff) in the case of Inglis, which was cited to us, to the effect that if the tenant is put under no restriction by his lease he is entitled to destroy rabbits as an ordinary agricultural operation necessary to the cultivation of the farm. And by Lord Cowan when he says—"It must be held to be quite fixed that, where there is no stipulation to the contrary and no obligation expressed or implied to the effect that the landlord has reserved to himself the rabbits on a farm, the agricultural tenant is entitled by the common law to kill them, and so to protect himself against damage to the crops." In my view the justification for the common law right is stated in both these opinions with perfect clearness, and, as I read these opinions, no limitation is placed upon the right. It is not said, in particular, that if at any time there be no necessity for the protection of any crop to shoot rabbits, then the tenant's common law right is gone. That limitation, it has been suggested, is placed upon the right by an *obiter dictum* of Lord Rutherford Clark in the subsequent case of Macrae. If so, all I can say, in common with the learned Professor of Scots Law, is that I should regard the limitation as futile, because it is perfectly obvious that under no conceivable conditions could it be shown that, on an ordinary agricultural farm, it was not necessary to shoot rabbits for the protection of the crop. However that may be, it appears to me that this case is really covered by authority. I refer to the case of Stewart which was cited to us, in the reasoning in which I desire to express my entire concurrence. Mr. Stewart contended to us that we were not here entitled to assume that the lease under which the tenant held did not contain a reservation to the landlord of a right to shoot rabbits, and that that might be so; and that, accordingly, there might possibly be no common law right in the person of the appellant's author, James Weir. To which I think the complete answer is that that the learned Sheriff-Substitute has found that James Weir is tenant of the farm, and has, in effect, found that there are no conditions, and even that there may be no lease in writing of the farm at all, and that, if there was a lease which contained the reservation in question, it rather came by way of reply to the appellant's reply to the charge against him.

Mr. Stewart referred us to the first section of the Day Trespass Act and the twelfth section of that statute as supporting his view. I do not think the twelfth section has any application to this case at all. But the proviso at the end of the first section was, I think, complied with by the appellant in this case when he pleaded the common law, because it runs thus:—"Provided always that any person charged with any such trespass shall be at liberty to prove by way of defence any matter which would have been a defence to an action at law for such trespass." And it certainly would have been a complete answer to an action at law to plead the permission of a person who had a common-law right to kill rabbits. Accordingly, I came to the conclusion, without hesitation, that the Sheriff-Substitute was wrong when he found that the fact stated in the tenth finding was a conclusive answer to the plea that the common-law right in the person of James Weir protected the appellant from a prosecution under the Day Trespass Act.

Upon the question whether or no the Sheriff-Substitute was right in holding that the appellant was not *bona-fide* employed by James Weir for reward to take or destroy ground game, I am very clear that that was a question of fact for the Sheriff-Substitute alone to determine, and that he is final. It was, no doubt, said that we were entitled to look at the grounds upon which he had reached the conclusion that this was not a *bona-fide* permission, and that these grounds were to be found set out in the sixth article of the stated case. Well, be it so, I think the facts there set out were sufficient to warrant the Sheriff-Substitute in coming to the conclusion that there was no *bona-fide* permission here, and that, if he came to that conclusion we ought not to disturb his finding. I am for answering the question put to us in the negative."

Lord Skerrington and Lord Cullen concurred.—*The Scottish Farmer*.

Wounded Soldiers entertained at Brixton.

Mr. and Mrs. Salusbury Price, of Essex Lodge, Brixton Hill, inaugurated a charming fortnightly function last Saturday, when they arranged their first party to wounded soldiers. Though the Hill has of recent years been losing some of its rural charm, the beauties of the grand garden at the rear of Essex Lodge remain unimpaired, and the scene there is as fascinating and reposeful as it was many years ago, when the famous C. H. Spurgeon used to spend occasional afternoons there and declare that the garden was the most pleasant one that he had ever seen.

The wounded soldiers who were so cordially welcomed there on Saturday all came from the King George Hospital in Stamford Street, where there is no garden at all, and so the brave boys were delighted to find themselves, in an old-world garden off Brixton Hill. The party comprised some thirty soldiers, all of whom have seen serious fighting, and included Colonel Field and one of the Australian Contingent.

Very badly wounded some of them were, but nevertheless all most merry and bright, for the kindly host and his wife not only provided those commissariat comforts which soldiers like so much, but also had about twenty friends to wait upon and entertain them. The party, therefore was soon able to make itself at home.

Quite the most agreeable feature of the occasion was a band, which the soldiers enjoyed immensely, for there has not been much music on the battlefields of France. There was, too, a nice little sing-song in the drawing-room, with songs with choruses. Tea, with heaps of good things, was an *al fresco* affair, the tables being laid beneath the shade of the fine trees which enclose the garden. Mr. Lang Sims was good enough to take some

snapshots, so that the soldiers can have some picturesque souvenirs of the memorable afternoon.

Mr. Salusbury Price is a soldier's son and naturally an ideal host, and his guests were especially delighted when his father's sword was brought out and handed round. Mr. Price's father was at Waterloo. Another heirloom in which the soldiers evinced great interest was the parchment commission paper given to the owner's father over a hundred years ago. The Waterloo veteran, by the way, lived at Kennington, where he died at the age of 85.

Next week Mr. and Mrs. Price are taking a party of wounded soldiers to their farm in the country; and they are arranging for parties every fortnight, but as there are over a thousand wounded soldiers in the King George Hospital, Stamford Street, others might well emulate the thoughtful generosity inaugurated so successfully at Essex Lodge.—*The Free Press*.

Notice of General Meeting.

A meeting of the General Committee of The William Hunting Memorial Fund will be held on Tuesday, July 6th, at 7 p.m., at the Royal College of Veterinary Surgeons, 10 Red Lion Square, W.C. It is requested that all those gentlemen constituting the General Committee will attend. No other notice than this will be given.

HENRY GRAY, M.R.C.V.S. Hon. Sec. and Treas..

HUNTING MEMORIAL FUND.

Subscriptions received up to June 30th:—

Amount previously acknowledged	£373 1 6
W. Roger Clarke, Esq., M.R.C.V.S., 18, Gayton Road, Hampstead, N.W.	10 6
	£373 12 0

Further subscriptions are invited.

Remittances by Cheque or Postal Order to be made payable to "The Hunting Memorial Fund," and crossed "London, City and Midland Bank, Ltd., Kensington Branch."

HENRY GRAY, Hon. Sec. and Treas.
23 Upper Phillimore Place, London, W.

Animals and Earthquakes.

The influence of approaching earthquakes on animals has been noted long ago, and the existence of this strange faculty has been confirmed of late years. Thus, in Japan, horses grow restless in a peculiar manner before an earthquake. In Central America dogs and cats run out of the houses, and the inhabitants follow their example. At the time of the last earthquake in Italy all the birds left their nests and rose high in the air before the shocks made themselves felt. In Sicily it is said that the cocks began to crow a few instants before the commencement of the earthquake, whilst the dogs howled.—*Farmer and Stockbreeder*.

At a meeting of the Council of the Royal Dublin Society held recently the recommendations of the Committee of Agriculture were read and approved, and it was ordered:—

That a letter be written to the Department of Agriculture calling attention to the depletion of the breeding cattle of the country occasioned by the slaughter of the most suitable heifers, dairy and breeding cows.

That owing to the continued occupation of the Ballsbridge premises by the military, the Horse and Sheep Show and the Winter Show be not held this year.

ARMY VETERINARY SERVICE

Extract from *London Gazette*,
WAR OFFICE, WHITEHALL, June 29.

REGULAR FORCES. ARMY VETERINARY CORPS.
Superny. Capt. P. D. Carey is restored to establishment.
Dated May 11.

July 1.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Major J. A. Todd resigns his commn. Dated July 2.
To be Lieut.:—R. Bennett, F.R.C.V.S. Dated July 2.

MEDITERRANEAN EXP. FORCE. ARMY VET. CORPS.
The following casualty is reported:—

DIED OF WOUNDS—Lieutenant J. W. Brownless.

The Work of the A.V.S.

The following account of the organization at the front is from a contribution by "Eye-Witness" which appeared in *The Westminster Gazette* of June 19.

"Since the supply of transport animals for the Army comes almost entirely from overseas, the base ports naturally play an important part in its maintenance; and in the neighbourhood of each there is a large Remount Depot where all the horses and mules landed are collected and kept for at least two weeks in order that cases of latent disease may be discovered, and that the animals may recover condition after the sea voyage before being put to work. These depots are not hospitals, and any animals that are found to develop disease after disembarkation are handed over for treatment to the Veterinary Hospitals. The number of horses reaching the depots depends on the demands which have been sent home, often in anticipation of requirements, so that the units at the front may be provided with what they want without delay. The problem of keeping the Army horsed has been much simplified by the fact that there are now no privately owned horses, every animal having been taken over by the Government, the only difference recognised between horses being the class to which they belong—heavy draught, light draught, riding, or pack.

On issue to the troops the horses are sent up to the front on special horse trains, and are met and taken over at the railheads by conducting parties of the units for which they are destined. Each wagon is in charge of a man who is responsible for feeding and watering the horses. Owing to this system, to the care taken of them, and to the short distance travelled, the animals do not suffer at all from the journey.

Some difficulty was at first found in stabling the number of animals gradually accumulated in the country, but accommodation was improvised in factories or other buildings, or they were kept in the open until temporary stabling could be erected. Properly designed and well-laid-out depots have now been constructed at different points. These are well drained, supplied with water, and equipped with roads, and all the necessary accessory buildings for the staff, as well as the animals in their charge.

Working in connection with the depots, and under the same control, but not necessarily in the same places, are the Rest Farms, in which horses are received on discharge from the convalescent farms attached to the hospitals, before they are returned to the depots as fit for issue.

Besides the staff of officers of the Army Remount Service there is at each depot a large body of non-commissioned officers and men, most of whom have been

specially enlisted in the Army Service Corps for remount duties. They are classified as "Nagsmen" and "Strappers," the former being breakers-in or rough-riders, whilst the latter are grooms and stable-hands. The number required for a depot is approximately one-third of that of the horses under charge, and the total number of men in the country employed in these duties amounts now to several thousands.

The object of the Veterinary Hospitals, which are situated within easy reach of the Remount Depots, needs no explanation, and they receive disabled but curable animals from every quarter—from ship-board, from the depots, from the lines of communication, and from the front.

The principle acted upon in dealing with disabled animals is that the units in the fighting-line or elsewhere should be relieved as quickly as possible of the responsibility of looking after them; and the duty of collecting and conveying them to hospital is performed by the Mobile Veterinary Sections, which are special units of the Army Veterinary Corps, organised for this purpose. Worn out or incurable horses are destroyed wherever they happen to be.

In most cases the necessary accommodation for the hospitals has now either been built or is being built; but during the period when improvised measures were unavoidable the numerous brickfields and tile factories which abound in this part of France came in very useful. Not only did the hundreds of yards' length of open drying shed form admirable stables, but the bricks stacked close by provided excellent material for flooring stables, making roads and means for competing with the mud—the universal enemy in winter.

In the installation and maintenance of these establishments the Army Veterinary Corps has received invaluable help from the Royal Society for the Prevention of Cruelty to Animals, which has co-operated with the military authorities most generously, loyally and disinterestedly. It has provided some of the accessory buildings, and such equipment as motor lorries, ambulances, chaff-cutters, and corn-crushers, and has also assisted to enlist many of the men employed.

Working in connection with the hospitals are the convalescent farms situated at different favourable points, which receive the horses on discharge from the hospitals, and pass them on to the rest farms. The hospitals and convalescent farms are under the control of the Director of Veterinary Services, the officers and men in charge being members of the Army Veterinary Corps, the strength of which has now gone up to some thousands. Their installation has been most amply justified by results, for over 85 per cent. of the horses treated in hospitals up to date have been returned fit for duty.

Personal.

Mr. W. BRAES, Linlithgow, was one of the judges in the light horse section at the annual show of the Bathgate Agricultural Association, on Wednesday 23rd ult.

There is at present in the stable of Mr. James Lindsay, V.S., Whitesands, a foal belonging to Mr. Callander, Gomerig, Kirkmichael, which has five feet. It was born a fortnight ago, and is out of a pedigree Clydesdale mare. The extra foot protrudes from the pastern of one of the front feet, and it is split in two like the hoof of a cow. The foal is a fine healthy youngster and is thriving well.

Mr. R. H. GILMORE, M.R.C.V.S., who has been Secretary of the Coleraine Agricultural and Industrial Association, Ltd., for several years, was present and officiating at the annual show.

Mr. J. KERNOHAN, M.R.C.V.S., Ballymena, acted as one of the judges of horses at the Strabane Show.

OBITUARY.

ROBERT BRYDON, M.R.C.V.S., Seaham Harbour, Co Durham. Graduated Edin: April, 1864.

The death occurred at his residence at Seaham Harbour, on Monday morning, June 28. Mr. Robert Brydon was one of the best-known breeders of Clydesdale horses in the country. He had been connected with the Seaham Harbour Clydesdale Stud, formerly the property of the Marquis of Londonderry, for forty years. He was the owner of Bonnie Buchlyvie, one of the finest Clydesdale stallions in the world, and he was much in request as a judge at the Royal, the Highland, and other shows. He was brother-in-law to the late Mr. William Hunting, F.R.C.V.S.

Lieut. J. W. BROWNLESS, M.R.C.V.S., A.V.C., who has died of wounds at the Dardanelles, was the well-known veterinary surgeon of Kensington and Ranelagh. He served in the South African War, receiving the Queen's and King's medals. In the early part of the present war he was engaged in Army veterinary work at home, but on applying for active service received his commission in February last, and left at once for the Dardanelles. He was veterinary surgeon to the Barnes District Council.

Sub-Lieut. JOHN W. EDWARDS, A.M. INST. C.E., eldest son of Mr. J. W. Edwards, of Kingston-on-Thames, has been killed in action at the Dardanelles. He was attached to the Nelson Battalion of the Royal Naval Division. His father is the veterinary surgeon of the London and South Western Railway Company.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)			(a)	
IRELAND. Week ended June 19	...	...	...	...	...	...	Outbreaks 2		2	7	34
Corresponding Week in	1914 ...	...	...	...	...	...	1		4	2	36
	1913 ...	...	...	...	...	...	...		15	2	19
	1912 ...	...	...	...	...	...	2		2	5	43
Total for 25 weeks, 1915	...	1	1	...	1	3	33		249	140	822
Corresponding period in	1914 ...	1	1	75	955	...	48		342	115	615
	1913 ...	...	...	...	...	...	90		310	82	499
	1912 ...	2	2	...	...	...	43		255	133	1245

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, June 21, 1915
 Note.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

For Sick and Wounded Horses.

On Saturday, June 19, Lady French paid a visit to Bedford to make a special appeal for donations towards providing another base Veterinary Hospital for the British sick and wounded horses at the front. The enterprise was well organised. Ladies in every street waited upon passers-by with small Union Jacks and badges for personal wear, and larger flags for bicycles, these decorations being offered for sale for a consideration which was placed in boxes carried by the collectors. The people responded freely, and very few were those who wore no favours.

The event of the day was a meeting in Bedford Park, followed by a procession, arrangements for which were entrusted to the able hands of Mr. W. Machin. In the Park there was a large crowd around the enclosure. Lady French was received with hearty cheers. Among those on or near the platform were the Mayor (Ald. H. Browning), Canon Speck and Mrs. Speck, Col. F. L. Penno, A.A. and Q.M.G. 53rd (Welsh) Division, Col. Meredith, A.D.V.S., Major Pattern, A.P.M., and other members of the Staff, Lt.-Col. V. Mellor (for the Bedford Depot in the unavoidable absence of Colonel Henderson), Miss V. Studley Westoby (Apsley Guise), Branch Secretary R.S.P.C.A., Temp. Hon. Lieut. E. G. Fairholme, A.V.C., Secretary R.S.P.C.A., and Hon. Sec. of the Wounded Horses Fund.

The Mayor said that on behalf of the town of Bedford he tendered a sincere and hearty welcome to Lady French, and said they were exceedingly proud that she had done them the honour of this visit. In France the horses were suffering terribly, and required all that human beings could do for them. Thank God, the motors had come along to relieve horses of a great deal of their pain and strain, but in warfare they could not do without horses, and it was for the people who were living practically at peace to swell the funds for the treatment of these animals when they were wounded. In the north of England large sums had been raised for this purpose, but General French wanted another base, and it was up to Bedford to respond in a way that would remind him that they were always ready to do their duty.

Col. Penno expressed on behalf of Maj.-Gen. Lindley, Commanding the Welsh Division, his great disappointment at not being able to be present to offer, in the name of the Division, a most hearty welcome to Lady French. As a soldier, he expressed to Lady French their very great pleasure in welcoming her into their midst (cheers). As soldiers, they were longing for the order to come that they might proceed over seas and fight under the Field-Marshal in their country's just cause (cheers). He had great pleasure in stating that the Welsh Division had a high reputation for looking after horses (applause). He was told by a high authority that for a Territorial Division, their horses were easily first. He would also like to thank the people of Bedford for the most kind way in which they had received the Welsh Division, and for the many acts of hospitality extended to them.

Lady French, who was received with hearty cheers, thanked the people for their kind reception. It was not in her power to make a speech, but they knew that she had come especially to ask them to give as much as possible for the poor sick and wounded horses. Everyone could give at least pennies, and she hoped that all would do their best. It was always a pleasure to come to Bedford, which had already honoured Sir John French by making him a Freeman of this ancient borough. She therefore felt that she belonged to the town, and would ask her fellow-townsmen to do their best in response to this appeal (cheers).

Temp. Hon.-Lt. E. G. Fairholme, as Hon. Sec. to the Fund, thanked Lady French on behalf of the Society, for coming to inspire the people of Bedford with a desire to help the sick and wounded horses of the British Army. He wished they could go over the hospitals in France and see how splendidly the British Army was looking after the horses. It made him proud to feel that their Society was allowed to help in the wonderful work which the Army Veterinary Corps was doing. Thousands of horses he saw, some just arriving from the front, and others going back to their work, looking as fit as if they were going to a horse show (applause). It made one feel that they were really a horse-loving and sport-loving nation, for they now felt that when a horse was wounded in battle it was the duty of the nation to look after him, as well as the wounded man, and make him well (applause). It made them proud of being British, and proud of the movement which was started in this country 90 years ago, which was now going round the world, and was able to build up the British Army Veterinary Corps, which was working so well at the front. They had collected a sum of £35,000, but more work had to be done. The Society had already built a large hospital somewhere in France, and another was wanted. They wanted to feel that when they were asked by the A.V.C. to build another, or two more if wanted, they would be in a position to do so.

After a collection on the platform and round the enclosure, Capt. the Hon. Mowbray St. John proposed a vote of thanks to Lady French, who, he said was setting them a noble example of duty. Her anxiety since the beginning of the war must have been very great, but, as the soldiers said when they asked "Are we down-hearted?" "No, we are not." If there was any man present who had not come forward, was it not time that he did his bit? The only people who would be happy when the war was over were those who could say "I helped" (applause).

Three cheers were loudly given for Lady French, and the band played the National Anthem.

THE PROCESSION.

The mounted escort fell into place as Lady French's carriage came by. The procession was headed by two well-mounted members of the Borough Constabulary. The band of the Royal Engineers from the Signal Depot at Haynes Park led off, followed by some mounted military police and part of the mounted escort of picked men of the Westmoreland and Cumberland Yeomanry—the cavalry unit of the 53rd Division. Next came Lady French's carriage with the Mayor's Sergeant on the box. More of the mounted escort brought up the rear. There were numerous other motors and carriages, and in one the Bedfordshire Regiment was represented by wounded men. The pageant continued with a R.S.P.C.A. horse ambulance containing a horse whose neck was swathed in cotton wool and bandages, and was drawn by a couple of magnificent heavy animals attended by men of the A.V.C. The band of the 4th Welsh, followed by detachments of mounted men from the Beds. Yeomanry and the mounted units of the 53rd (Welsh) Division, viz., Royal Field Artillery, Royal Garrison Artillery, Royal Engineers, A.S.C., and R.A.M.C. In the rear was a large parade of Boy Scouts, headed by the Biggleswade Bugle Band. The Scouts were commanded by District Scoutmaster E. W. Ebbutt, with whom was Lord St. John, County President.

At the Park the cavalcade marched past Lady French and was drawn up in a long line. Lady French passed by the front of the whole line and reviewed the various units; after which she left amid the plaudits of the crowd.—*Bedford and County Record*.

The Royal Sanitary Institute.

A Sessional Meeting will be held on Wednesday, July 14th, in the Town Hall, Yeovil, at 11.15 a.m., when Discussions will take place on "WATER SUPPLIES TO RURAL AND SMALL URBAN AREAS," to be opened by W. G. Savage, M.D., B.Sc., Medical Officer of Health, Somerset C.C.; and on "PREVENTION OF MINOR INFECTIOUS DISEASES," to be opened by A. E. Remmett Weaver, M.D., D.P.H., Medical Officer of Health, Yeovil.

The Chair will be taken at 11.15 a.m., by Sir Henry Tanner, C.B., I.S.O., F.R.I.B.A. (Chairman of the Council of the Institute).

PROGRAMME.—11.0 a.m.—Visitors will be received by His Worship the Mayor (Councillor Norman Buchanan). Light Refreshments will be provided.

1.30 p.m.—Luncheon at Mermaid Hotel. 2/6 each.

2.30 p.m.—Visits to: (1) Skin Dressing Yard and Glove Factory; (2) Creamery, Cheese and Food-Packing Works (manufacture of St. Ivel Lactic Cheese, etc.).

Tickets for admission of visitors may be had on application to Dr. A. E. Remmett Weaver, Medical Officer of Health, or to Mr. Arthur Oddy, Surveyor, Yeovil, who are acting as Hon. Local Secretaries of the Meeting; and of E. WHITE WALLIS, Secretary.

Infectious Abortion in Cattle.

In the annual report of the United States Bureau of Animal Industry for 1914, Dr. A. D. Melvin describes contagious abortion as a "disease that has gained such prevalence and causes so much loss that it must be ranked in importance with hog cholera and tuberculosis." As it is equally an evil in this country, it is interesting to note what the chief of the Bureau has to say of the present stage of investigations. Dealing especially with work done in 1914, Dr. Melvin says:—

"Additional evidence has been obtained to prove that a large proportion of cows that become affected with the disease remain, after seeming recovery, chronic carriers of its specific bacillus.

"An attempt has been made to distinguish between milk infected with and that which is free from the abortion bacillus by the use of the so-called agglutination test. It has been found that the agglutinating power of infected milk for the abortion bacillus is a positive factor; that it varies enormously; that it is

approximately half as strong as that of blood serum; that it is not at all affected by the souring of milk or the period of time in which milk naturally sours under ordinary conditions; that milk serum, obtained by filtering milk in which the casein has been coagulated by the addition of pepsin, agglutinates as strongly as whole milk; that the agglutinating power of milk is not greatly affected by the degree of temperature commonly recommended for pasteurisation; and that it is destroyed by a boiling temperature.

"Additional observations have been made on the persistence of the abortion bacillus after injection in the bodies of other species of animals than cattle, and on the possible danger that other species may serve as agents for its dissemination.

"Experiments regarding the treatment of infectious abortion, though they include some methods defined by their originators as nearly infallible, have not given promising results."

Slaughter of Animals Order, 1915.

"We are officially informed that the Board of Agriculture have under this Order prohibited the Slaughter of:—

(a) Animals which are visibly or obviously in-calf or in-pig; and

(b) Calves under the age of twelve weeks, except male calves of Channel Islands, Ayrshire and Kerry breeds.

The restrictions do not apply to:—

(a) Slaughter of an animal under the powers conferred by the Diseases of Animals Acts, 1894 to 1914, or any Order made thereunder; or

(b) Slaughter of an animal necessary or desirable on account of accidental injury to the animal or its illness; or

(c) Slaughter of an animal if, in the opinion of the Board of Agriculture and Fisheries, the slaughter is desirable for any exceptional reason or purpose and the slaughter is authorised by a licence granted by that Board or an officer of that Board.

Any contravention or failure to comply with the Order renders the offender liable to a fine of £20, or, if the offence relates to more than four animals, to a fine of £5 for each animal.—*Meat Trades Journal*.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
GR. BRITAIN.											
Week ended June 26	7	12			3	3	19	41		120	543
Corresponding week in											
1914 ...	7	9			4	12	32	49	2	92	1248
1913 ...	2	2			5	6	36	71		56	432
1912 ...	13	15	4	38	7	21	39	57		63	526
Total for 26 weeks, 1915 ...	358	401			25	39	‡411	‡900	156	2334	10777
Corresponding period in											
1914 ...	441	471	11	74	53	142	1380	2456	147	2188	22571
1913 ...	317	342			88	243	1659	3382	121	1230	17037
1912 ...	497	557	4	38	87	185	2100	4657	162	1797	22841

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.
Board of Agriculture and Fisheries, June 29, 1915.

† Counties affected, animals attacked: Kent 2, London 1.
‡ Figures for thirteen weeks only.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1409.

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VOL. XXVIII.

THE COUNCIL MEETINGS.

The Council meeting which we report this week was very long, and also more than usually interesting. A great deal of important and very varied business was dealt with, and was handled in a commendably business-like manner; and the result is a report of much more than average interest.

There will be no two opinions with regard to the first business done—the re-election of the President. Few Presidents of the R.C.V.S. receive the compliment of a second year of office; but no one ever deserved it better than Mr. Garnett has done, alike for his presidential work and his previous career upon the Council.

The financial outlook is more gloomy than ever. Discussion took place upon it, and all members should read this; but there is one additional point that deserves to be remembered. We all know the present and the probable future effect of the New War Loan upon Consols—and all our stock is in Consols. Our bankers' overdraft now represents the value of nearly a quarter of our stock at the present market quotation of Consols. If the universal forecast of the market proves correct—which we fully expect—the actual position when our stock becomes saleable again will be even worse than this. In fact, the advent of the War Loan has brought us sensibly nearer to bankruptcy. Meanwhile, our all-important Bill has no chance at all of being passed during the war—that much is certain. But it does seem possible that, after the war, the Bill may have a better prospect than it ever had before.

A great deal of work (which really included the reports of two quarterly Committee meetings) was done in connection with the Registration Committee. No fewer than four members were struck off the Register—all for different and separate offences—and it is noteworthy that three of the four cases had some connection with the war service. This ought to be a warning to those men who require fear of punishment to keep them straight—the report will show them that the Council are likely to act rigorously against any misconduct arising out of the war.

Quite a number of other matters of interest, some of which are or may become of importance, appear in the proceedings. The resolution regarding compulsory pupillage was mentioned in a Committee's report, but was not discussed at all by the Council; and it is hardly likely that very much more will be heard of it. The same cannot be said of the question of the admission of women, which has been revived from a quarter capable of exerting influence, and which provides not the least interesting page of the report. These are general questions,

which concern every practitioner more or less, and there are other points of more limited interest. One minor one is the re-grouping of Committees. Five of the numerous Committees are to be amalgamated into two—a change in which we see some advantages and no drawbacks. More important than this, there is a possibility—if not probability—of another special examination being held for final year students in September or October. Practically this means the suspension of a bye-law; and it will not be done without some trouble to the Councilmen, especially if September is chosen. They are certainly doing their best to supply new graduates for the army.

Altogether the report makes very interesting reading. Among other things, it very well shows—to those who can remember so far—how much greater in quantity and more varied in kind the Council's work is to-day than it was twenty-five years ago.

ADRENALINE IN THE TREATMENT OF HÆMOPTYSIS.

The following case I wish to record on account of the remarkable effect of adrenaline chloride, which was the only medicine used.

The subject was a five-year-old harness mare in good hard condition, but was suffering from a cough for some time.

History. About noon yesterday the owner took animal for a drive, but had only proceeded some few hundred yards, when he noticed blood coming from her mouth, to be immediately followed by a violent fit of coughing. At each cough a large mouthful of clotted blood was ejected. The owner at once took mare back to yard and sent for me.

I could not attend at once as I was not at home, and did not see mare for nearly an hour after bleeding started. When I arrived in the yard, the ground where mare was standing was covered with heaps of clotted blood, and I thought she was in a hopeless condition. I, however, gave her two drachms of adrenaline chloride hypodermically.

Before administration of adrenaline the fits of coughing occurred about every half-minute, but after the injection the cough did not return for five minutes, and then only a small amount of blood was ejected, and within twenty minutes of administration the bleeding and cough had ceased, and have not since returned. I am sure mare must have at least lost a gallon of blood.

The mare is now in perfect health again, and I am certain but for adrenaline she could not have lived more than a few hours.

L. C. MAGUIRE, M.R.C.V.S.
Roscrea, 30th June, 1915.

Royal College of Veterinary Surgeons.

A meeting of the Council of the Royal College of Veterinary Surgeons was held at the College, 10 Red Lion Square, London, W.C., on Friday, July 2nd. Mr. F. W. GARNETT, J.P. (President), occupied the Chair, and the following members were present:—Maj.-Gen. Pringle, Maj.-Gen. Thomson; Profs. Bradley, Sir John McFadyean, Mettam; Messrs. Banham, Barrett, Carter, Clarkson, Dunstan, Howard, Lawson, Mulvey, Price, Share-Jones, Shipley, Slocock, Sir Stewart Stockman, Trigger, and Wharum; Mr. G. Thatcher (Solicitor), and Mr. F. Bullock (Secretary).

MINUTES.

The minutes of the Meeting of Council held on Friday, July 3rd, 1914, which had been printed and circulated, were taken as read and confirmed.

ELECTION OF PRESIDENT.

MR. MULVEY: Gentlemen, it affords me very much pleasure to propose the re-election of our present President. (Cheers). He has fulfilled the duties of the office to the satisfaction of us all. These are exceptional times, not only in the history of this country but of this College. When I say that, I mean that we are now at a crisis in the history of this College in the way of funds. Our President has had much to do with trying to induce the present Government to allocate to us a certain sum of money to enable us to carry on until our Bill is passed, and I think it would be a very grave mistake to "swop horses in the middle of the stream." (Hear, hear). I therefore propose—and from the way you have received what I have said, I have no doubt it will be unanimous—the re-election of our President. (Cheers).

MR. LAWSON: I have great pleasure in seconding that; I think he is the right man in the right place. (Hear, hear).

MR. TRIGGER: As one of the senior members of the Council, having sat here for twenty-five years, I should like to be allowed to support the resolution. During the long period I have had the honour of sitting on this Council we have never been presided over with greater dignity, greater courtesy, or in a more able manner. Mr. Garnett's name stands high, not only with the Council, but with the profession and the community at large. It is quite needless to say more; I very heartily support the resolution.

THE PRESIDENT: Is there any other nomination.

MR. MULVEY: If there are no other nominations, I beg to put to the meeting the motion that Mr. Garnett be elected as President for the ensuing year.

The resolution was then put, and carried with acclamation.

THE PRESIDENT, who was received with cheers on rising to reply, said: Mr. Mulvey and Gentlemen,—I need not say I thank you very much for re-electing me at the present juncture of our history, both our national history and our own immediate history. What I have done in the past I shall try to do in the future. I cannot omit thanking all the members of the Council for the support they have given me during the past year. I do think I am saying anything which is at all derogatory to the country members when I say that it is almost impossible without this loyal co-operation, especially of members residing in or near London, to carry on the duties of the Presidency. I have specially to thank Sir John McFadyean, Mr. Mulvey and others, who have saved me many a journey, and done for me the work which should have been done by the President. But,

one and all, I thank you heartily for your support in the past, and I feel sure that I may look forward to the same support in the future. (Cheers).

ELECTION OF TWO VICE-PRESIDENTS.

MR. TRIGGER: I am very pleased to welcome the change in the Charter whereby we now have only two Vice-Presidents instead of six. It is a change which, as you are probably all aware, I have advocated publicly outside this Council Chamber for many years. I believe that the position of Vice-President will carry a dignity which it certainly did not carry before, because six was too large a number to select from such a small community as we have here. I suggest that these positions should be held by gentlemen of experience on the Council, and I certainly think that the Past-President should be one. I therefore have very much pleasure in nominating Mr. Carter as a Vice-President for the ensuing year. I think, further, that the vice-presidency should be a reward for work done, and I think if one man more than another has done hard work for this Council it is Mr. Mulvey. (Hear, hear). I therefore have very great pleasure in proposing that our Vice-Presidents for the ensuing year be Mr. Carter and Mr. Mulvey. I think it will be a very good precedent to set to elect the immediate Past-President, because it is desirable that the retiring President should be a Vice-President, as he is in touch with the Secretary, and I am sure we are only too delighted to honour our friend Mr. Mulvey for the anxious time he has been passing through, and is passing through, by making him one of our Vice-Presidents.

SIR JOHN McFADYEAN: I agree absolutely with every word that Mr. Trigger has said, and I have great pleasure in seconding the resolution.

THE PRESIDENT: Are there any other nominations for the two Vice-Presidents?

If not, I will put the motion that Mr. Carter and Mr. Mulvey be elected Vice-Presidents for the ensuing year.

The resolution was put, and carried with acclamation.

MR. CARTER: Mr. President and Gentlemen,—I thank you very much indeed for the very great honour that you have conferred upon me by electing me as one of Vice-Presidents for the ensuing twelve months. It is an honour which I thoroughly appreciate. I thank you very much indeed.

MR. MULVEY: Mr. President and Gentlemen,—I can only say that I appreciate very highly the honour that has been conferred upon me, and the very kindly remarks that proceeded from Mr. Trigger when he proposed the motion. (Cheers).

ELECTION OF TREASURER.

THE PRESIDENT: The next business is the appointment of the Treasurer.

A VOICE: We had better have a change! (Laughter).

MR. MULVEY: I cannot hold two offices, and I would suggest that if it is possible I may be relieved of this office.

THE PRESIDENT: I am going to take it upon myself to propose the re-election of Mr. Mulvey as Treasurer. (Hear, hear). I am certain he has the confidence of all members of the Council, and we certainly cannot do without him. (Hear, hear).

MR. CARTER: It gives me very great pleasure indeed to second that.

THE PRESIDENT: Is there any other nomination for the Treasurership? If not, I will put the motion that Mr. Mulvey be elected Treasurer for the ensuing year.

The resolution was put, and carried with acclamation.

MR. MULVEY: Gentlemen, I can only again say that I am honoured by your confidence. The duties are not altogether very light at the present time. I have very anxious minutes and hours in thinking how to meet the liabilities, and I hope that to-day, on the discussion of

the Finance Committee's report, some member will be able to suggest a means of wiping out this terrible overdraft at the bank. I thank you, Gentlemen.

ELECTION OF SECRETARY AND REGISTRAR.

The PRESIDENT: The next business is the appointment of a Secretary and Registrar. Again I take it upon myself to propose the re-election of Mr. Bullock. (Hear, hear). I cannot speak too highly of Mr. Bullock's work as seen by the President, and I think all Past-Presidents who have had the benefit of his services will agree with me when I say that they could not possibly have anyone who looks after the business of the College in a better way than Mr. Bullock does. (Hear, hear). In proposing the motion, which I feel sure will be received unanimously by all of you, I should like to suggest at the same time that we thank him for his past services. (Hear, hear).

Mr. MULVEY: I must ask you, Sir, to allow me to second that. Perhaps no one has been more associated with Mr. Bullock and his work than I myself, and I can assure the members of the Council that that work is invaluable to us. Mr. Bullock does his work thoroughly, and merits the esteem and confidence of the Council. (Hear, hear).

The resolution was then put, and carried with acclamation.

Mr. BULLOCK: Mr. President, Mr. Mulvey, and Gentlemen,—I thank you very much indeed for the honour you have done me in re-electing me. It is always a great pleasure to do my duty to the Council of the Royal College of Veterinary Surgeons.

This concluded the First meeting of the Council.

Immediately following this meeting a Quarterly Meeting of Council was held. Mr. F. W. GARNETT, J.P. (President), occupied the Chair, and the same members were present as at the First meeting of Council, with the addition of Prof. Shave.

MINUTES.

The PRESIDENT: The minutes of the last meeting have been printed and circulated. I do not think there is anything arising out of the minutes, excepting the reports from the various Committees. There were certain resolutions passed at the last meeting of the Registration which could not be dealt with then owing to lack of a sufficient number of members being present, but they will be presented at this meeting if we have a quorum.

The minutes were then taken as read, and confirmed.

OBITUARY.

The SECRETARY read the Obituary List.

ADMISSION TO MEMBERSHIP.

The SECRETARY announced that the following admission to Membership had been made since the last meeting of Council: Mr. J. D. D. SEWELL, London.

CORRESPONDENCE.

The SECRETARY: There is no correspondence, except that I have to announce that I received apologies for absence from Mr. Burt, Principal McCall, Mr. Packman, Mr. McKinna, and Mr. Sumner.

RIGHT OF WAY.

The SECRETARY: I have to announce that, in accordance with annual custom, I passed through the door into Yorkshire Grey Yard on June 24th, and on other occasions during the year, in order to maintain the right of way of the College through the Yard.

FINANCE COMMITTEE.

The SECRETARY read the following report of a meeting of the Finance Committee held on Friday, July 2nd, 1915:—

Appointment of Chairman.—In the absence of the Chairman it was resolved that the President be appointed to the Chair.

Financial Statement.—The Treasurer submitted his Financial Statement for the quarter, showing a balance due to the bank of £811 9s. 8d., and liabilities amounting to £152 4s. 2d.

It was resolved—That the Treasurer's Statement be approved, and that he be ordered to pay the liabilities shown, together with cheques for monthly salaries, Examiners' fees and expenses, and examination expenses, gas and electric light.

Overdraft.—Correspondence with the bankers was submitted, and the Treasurer reported that, in order to reduce the overdraft, he had arranged to sell £1000 of Consols under the authority given by the Council in April, 1914. Up to the present, however, he has found it impossible to complete the sale.

Application to Treasury.—The following letter was received from the Secretary to the Treasury:—

12th June, 1915.

"Sir,—The Lords Commissioners of His Majesty's Treasury have given careful consideration to your letter of the 28th ultimo, making application for a special grant from public funds to the Royal College of Veterinary Surgeons to meet loss of income owing to the war.

In reply, I am to request you to inform the College that My Lords feel compelled to restrict any special grants of this nature to those institutions which normally receive grants-in-aid out of moneys voted by Parliament, and they regret therefore that they cannot accede to your application."

It was resolved—(a) That a Petition be laid before Parliament, calling attention to the financial position of the College, and praying for a grant-in-aid until such time as the Veterinary Surgeons Act Amendment Bill could be passed.

(b) That the drawing-up of the Petition be left in the hands of the President, Treasurer, and the three Trustees of the College.

Income Tax.—It was resolved That an application be made to the Income Tax Commissioners for the return of the Income Tax deducted from dividends from Consols during the past three years.

On the motion of Mr. SHIPLEY, seconded by Mr. LAWSON, the report was adopted.

Mr. MULVEY: Does that conclude the business so far as the Finance Committee is concerned? Is there no chance of any discussion on the report?

The PRESIDENT: I think we will hear a statement from our Treasurer. I tried to get him to speak, but he would not.

Mr. MULVEY: My only object in asking to make a statement is that you have all got the balance sheet before you, and you see the position we are in. The overdraft, when these accounts are paid, will be £961. The bank have agreed to allow us an overdraft up to £1300, for which we have to pay about 6 per cent. interest. This cannot go on for ever, and before the end of the year we shall be wanting about another £500, which will bring us up to an overdraft of between £1300 and £1400. There are a good number of members present, and I was hoping that out of the multitude of Councillors we should be able to find someone who could suggest some means of reducing this overdraft. I have tried to sell a thousand pounds' worth of Consols, so as to place them to the credit of the bank so that we should not have so much interest to pay, but I am told that they are absolutely unsaleable at the present moment. The probabilities are that the minimum will be reduced shortly, and then we may be able to sell them; but then that does not meet our future liabilities. (Hear, hear.) Every year you must remember according to the present accounts we exceed our income by about £500. Where is the money to come from? (Cries of, "The profession")

and "The Bill"). It is stated in an official letter from Mr. Acland that you will probably hear read to you to-day that the Bill will not be proceeded with. If it had not been for opposition the Government proposed bringing it forward, but in consequence of the opposition they decline to go forward with it in any way, and as a matter of fact it is thrown out. We cannot depend on that, at all events for another year or two. We must grasp the fact that we must do something. Has the time arrived, or would it be acceptable, do you think, if we asked the profession to help us in our difficulties? Would it be possible, do you think, to get a few hundreds a year from the profession in order that we may not be getting deeper into the mire? Something must be done. It is no use coming here passing the accounts and saying, "Pay that much," and you will have nothing to pay it with, and very little to look forward to—in fact, nothing to look forward to. I was, perhaps, somewhat late in the day in rising to speak owing to an interruption, otherwise I should have risen before you put the motion, Sir, but I hope you will allow any members of the Council that are present to make any suggestions they like.

Mr. TRIGGER: Surely it would be a very simple thing, out of our membership of 3000, to get 100 members at least to guarantee £5 a year each. That would at all events meet our deficit, and it would put off the evil day for a little time. If we could get two or three hundred members to guarantee say £3 a year each so much the better.

Prof. METTAM: Three thousand at £1 each would be better still.

Gen. THOMSON: Or 1000 at £1.

Mr. TRIGGER: I should be quite satisfied if that could be done. When you get a difficulty you must tackle it. The profession must see this through, or we shall have to fall. We shall have to stand or fall together. My suggestion would be that we make an appeal to at least 100 members to guarantee £5 each, and I should be very pleased to be one.

Mr. PRICE: I should be very pleased to be another.

Mr. TRIGGER: Or, if you think it would be better to get a larger number of members to guarantee a smaller amount, I am quite prepared to fall in with that suggestion. But my suggestion at present is that we try to get 100 guarantors at £5 each.

Sir JOHN M'FADYEAN: I earnestly hope the Council will not accept the advice that has just been given to-day, not because I should not myself readily be one of the 100 subscribers of £5 if I thought that were a good policy. But I do not think it is a good policy. It reminds me exactly of the circumstances with regard to the prosecution of the present war, of the posters which we see in every street, that men are wanted; and we are individually appealed to to come and save the nation, whereas it is the duty of everybody who is able to carry a gun to join in saving the nation. Similarly, I say with regard to the answer to Mr. Mulvey's question as to where this money is to be found, that the profession must find it, and it must find it in the way the Council has already approved of. You must not take it from anybody that it is impossible that the Bill we have before Parliament will be passed, and passed possibly before very long. If we begin to collect voluntary subscriptions from a few generous men in the profession, the answer that will be made to us when we bring the Bill in again is: "It is not necessary; you have been able to raise all the money you require." As a matter of fact, the money is not needed at the present time, that is to say, we are not bankrupt; but we have told the public, we have told the members of our own profession, and we have lately told the Government, that unless we soon get this Bill we shall become bankrupt.

The Royal College of Veterinary Surgeons is not a body that can be dispensed with; they must have a

Royal College of Veterinary Surgeons or an analogous body; and when we approach bankruptcy—from which we are not very far distant—I am not without hope that the Government will recognise they must do more for us than they have done up to the present time. I think it is not a fair proposal to ask some one hundred or so of members out of three thousand to bear this burden entirely.

The PRESIDENT: I do not think we should consider this suggestion. I allowed the discussion to go on because owing to an oversight Mr. Mulvey did not rise before the motion was put. It is not advisable that we should do anything at the present time in the way of raising a voluntary contribution, in fact, it is damaging our own interests in my opinion. We are now appealing to the Government. You have already passed the resolution adopting the Finance Committee's report, and we must await the result of that. I think sufficient pressure can be brought to bear on them through that petition to bring about the desired result—either a grant or the passage of the Bill. If there is one thing certain it is that the Royal College of Veterinary Surgeons will never fall to the ground through lack of funds, even if it has to appeal to voluntary assistance, but it is only in the last resort that we should think of that.

Mr. TRIGGER: I quite agree with what you say, Sir. My suggestion was only meant to apply if you fail to get the money in any other way. I should be only too glad to see it come about on the lines Sir John suggests.

REGISTRATION COMMITTEE.

The PRESIDENT: I am pleased to say that we have now a quorum.

The SECRETARY read the report of a meeting of the Registration Committee, held on Thursday, 1st July, 1915, which stated:—Mr. J. P. Stableford, a member of the Royal College of Veterinary Surgeons, appeared to answer a charge of having been guilty of conduct disgraceful in a professional respect, within the meaning of Section 6 of the Veterinary Surgeons Act, 1881, the charge being of drunkenness, in consequence of which he was dismissed His Majesty's Service as Lieutenant of the Army Veterinary Corps. The Solicitor read an official copy of the finding of a Court Martial at Havre, on the 16th November, 1914, when Mr. Stableford was tried on a charge of having been drunk at Havre, France, on the 13th November, that he was found guilty of the charge and sentenced by the Court Martial to be dismissed from His Majesty's Service, and that the finding and sentence were duly confirmed on the 25th November, 1914. Mr. Stableford urged that he was not guilty of habitual drunkenness, and that having regard to the services of himself and family to the country a lenient view should be taken of the matter, and that the disgrace and punishment already received should be taken into consideration. The Committee find the charge proved.

Mr. Llewellyn Crook, a member of the College, was summoned to appear to show cause why he should not be struck off the Register in accordance with Section 6 of the Veterinary Surgeons Act, 1881, he having been convicted of obtaining or attempting to obtain goods by false pretences, and sentenced to four months in the second division. The Solicitor produced an office copy of the conviction of Mr. Crook at the General Quarter Sessions of Carmarthen on the 8th January, 1915, when he was convicted of attempting to obtain goods by false pretences from David Lewis, and was sentenced to be imprisoned for four months in the second division. He was convicted on a second count and fined the sum of 10s. The Solicitor read a letter received from Mr. Crook dated the 30th June, 1915, in which he stated his inability to attend, on account of want of means; he stated that if he had been professionally represented at the trial he would have been acquitted, and that he had

a jury prejudiced against him, and he also pleaded for leniency on the ground that he had been sufficiently punished. The Committee find the charge proved.

The Committee dealt with eleven other cases, in one of which it was resolved that a Member be called upon to appear at the next meeting of the Committee to show cause why his name should not be removed from the Register on the ground of advertising.

In the case of a non-member, J. Green, who had given a certificate as a veterinary surgeon, the Solicitor reported that a prosecution had been instituted and a conviction obtained with a fine of £2.

In another case it was resolved that the attention of the Secretary of the Court of Royal Warrants should be called to an advertisement of Stephen Pettifer & Son.

Other cases were ordered to stand over for further investigation, and a prosecution was recommended in one case if proper evidence was obtainable.

Correspondence.—Correspondence was submitted, and the Secretary was instructed as to the replies to be sent.

Applications for Restoration.—Applications for the restoration of their names to the Register were received from the following, whose names had been removed under Section 5, Sub-section (4) of the Veterinary Surgeons Act:—T. A. I. Anderson, Charles Edward Doyle, H. S. Howard-Jones, and William Scott. The applications were found in order, and it was resolved to recommend that the names T. A. I. Anderson, Charles Edward Doyle, H. S. Howard-Jones and William Scott be restored to the Register of Veterinary Surgeons.

Mr. MULVEY: I move the reception of the Report of the Registration Committee.

Mr. LAWSON seconded: the motion was carried.

The PRESIDENT: It is now open for discussion; but before we go any further we must turn back to the Minutes of the last meeting that we have before us, the recommendations in which were not carried out owing to the lack of a sufficient number of members being present. You will see this in the report of the Registration Committee of Thursday, April 8th.

"1809 (*Firr, J. T.*). This member applied in person for the restoration of his name to the Register, in accordance with Resolution 7 (vi) (b) of the meeting of Council in October, 1914. Testimonials and a medical certificate were also submitted.

It was resolved to recommend That the name of Mr. J. T. Firr be restored to the Register of Veterinary Surgeons."

Major-Gen. THOMSON: I propose that the name of Mr. J. T. Firr be restored to the Register.

Mr. PRICE: I second that. [The resolution was carried unanimously].

The PRESIDENT: The next item in the Minutes of the Registration Committee is:—

"1861 (*Barling, James Lionel*). Appeared with his Counsel, Mr. Milward. The Solicitor produced an official copy of a conviction which took place on 3rd November, 1914, at Hereford Assizes, when Mr. Barling was convicted for that being entrusted by Gerard Byng Stephens on the 13th August, 1914, with an Army (Horse Impressment) Order for £40, he did unlawfully and fraudulently convert £10 part of such property to his own use and benefit (also convicted on seven similar counts), and he was sentenced to three months' imprisonment as an offender of the second division. The Committee heard Mr. Milward at great length, and also Mr. Barling, but have no report to make beyond the fact that the conviction was duly proved."

In connection with that case we have received a petition from certain gentlemen to the number of 526 in Mr. Barling's immediate neighbourhood, praying that we may deal leniently with him. I will ask the Secretary to read the petition.

The SECRETARY read the following petition:—"To the President and Members of the Council of the Royal College of Veterinary Surgeons . . ."

Prof. METTAM: Should we not consider this in Committee?

The PRESIDENT: We have it definitely before us that we find he has been guilty of unprofessional conduct. There is nothing excepting this petition to take into consideration as to our finding. Unless there is some very special reason I am advised that it is not usual to go into Committee.

Prof. METTAM: Very well.

The SECRETARY continued reading the petition, as follows: "We, the undersigned, inhabitants of Hereford and the neighbourhood, have heard with great regret that the name of Mr. James Lionel Barling, M.E.C.V.S., is likely to be removed from the Register of Veterinary Surgeons. We have known Mr. Barling for many years, and have had many opportunities of proving his great professional skill, and of observing the care and attention which he has paid to his work as a veterinary surgeon. We know that Mr. Barling stood his trial at Hereford Assizes, and that he served a term of three months' imprisonment, and further that as part of his sentence he had to pay the costs of the prosecution amounting to a sum of about £110. We know further that he has had to bear the very heavy costs entailed by his defence before the Justices and at the Assizes, and before a Committee of your Council, and we understand that such costs amount to a sum exceeding £200. When Mr. Barling returned to practice it was generally recognised in the county that *if* he *had* done wrong he had had to suffer heavily therefor, and we among many others were prepared to regard the offence as purged, and we were ready to treat him again as a veterinary surgeon in whom we had trust and confidence. If Mr. Barling's name is removed from the Register we feel that he will be punished twice over for the offence, and will be made to suffer too heavily for what he has done in the past, and we beg to express our great hope that the Council of the Royal College of Veterinary Surgeons will recognise this petition, and the strong feeling current in the county, and that Mr. Barling's name may not be removed from the Register, and that he may be allowed to practice in his profession in which he is so well known and so universally trusted in the county where he has lived and practised for the past 47 years. He is now over 70 years of age."

The PRESIDENT: That is signed by 526 persons, including three mayors, deputy mayors and ex-mayors; 17 aldermen, councillors, and J.P.'s; five Town Clerks, Clerks of the Peace, and officials; eight members of the Royal College of Veterinary Surgeons; six doctors; six clergymen; 32 other professional men; five landowners; 113 tradesmen and others, and 331 farmers.

Mr. MULVEY: I think that as the time has now arrived for the discussion to take place on this case, we ought to resolve ourselves into Committee. I move accordingly. A discussion will have to take place on the case.

Mr. THATCHER (Solicitor): The suggestion is made, Sir, because this man is not here and is not represented. I do not wish it to go forward that this case has not had a fair hearing before the Council. That is my only reason for mentioning it.

The PRESIDENT: The Committee has already found that this man is guilty of unprofessional conduct, and now the Council have only to say what they are going to do with him.

Mr. MULVEY: The case has already been heard by the Committee, who have reported on it.

Maj.-Gen. THOMSON: I take it that this case arises out of the report of the Registration Committee to the Council.

The PRESIDENT: Yes.

Maj.-Gen. THOMSON: I think we are perfectly right to consider it as we are.

Sir STEWART STOCKMAN: What I feel is that if anybody wants to reconsider the case we must go into Committee, but if all the members are quite content with the recommendation of the Committee, then I see no reason why we should go into Committee. The motion is simply put and voted on.

The PRESIDENT: That is all. Does anyone desire to re-open this case? Because, if so, we will go into Committee once more.

Mr. PRICE: I feel that I should like to give Mr. Barling another chance.

Mr. MULVEY: Is it to be discussed?

Sir JOHN McFADYEAN: I second Mr. Mulvey's proposition that we go into Committee. I am afraid it is obvious that we are not going to have the resolution simply moved, but that we are going to have a discussion again. I second the motion that in the meantime we resolve ourselves into Committee.

The resolution, that the Council resolve itself into Committee, was put and carried.

The Council then resolved itself into Committee.

On the Council resuming its sitting in public,

The PRESIDENT said: As Chairman of this Committee I propose that the name of Mr. James Lionel Barling be removed from the Register of the Royal College of Veterinary Surgeons.

Mr. LAWSON: I second that. [The resolution was then put, and declared by the President carried by the requisite majority].

The PRESIDENT: Now we come to the case of Perkins.

The SECRETARY: The minute of the Registration Committee in connection with that case says:

"1871 (*Perkins, Percival*). Mr. Perkins, M.R.C.V.S., was charged with being guilty of conduct disgraceful to him in a professional respect (a) for inserting in a newspaper called the *Hastings and St. Leonards Observer*, published on 7th November, 1914, the following advertisement:—

"Mr. Perkins, M.R.C.V.S., Veterinary Surgeon of Hastings, has arranged with Mr. Beney, Olive House, Battle, to receive on his behalf messages and orders day or night; also to keep a stock of Horse and Cattle Medicines for emergencies."

"And (b) for soliciting the clients of a member of the College absent on Government service. Mr. Perkins did not appear, but sent a written statement.

"Lieut. Burton, A.V.C., appeared in support of the complaint. The Committee heard his statement and some correspondence. The facts are as follows:—Mr. Perkins is in practice at Hastings, and Mr. Burton was, until October last, in practice at Battle, and had been for 14 years; he left Battle in October for Government service and put his practice in charge of a qualified *locum tenens*. The advertisement then appeared, and was followed with the distribution through the post and otherwise of postcards with a similar announcement.

"Mr. Perkins in his statement admitted the advertisement, but with regard to soliciting said the cards were only sent to persons he had done work for while acting as *locum tenens* for past practitioners; but in a letter to Mr. Burton's *locum tenens* he stated they had been sent 'to the surrounding farmers, etc., taken from a local list,' which appears to have been the case, as a card was produced addressed and sent to Mr. H. Hicks, Barracks Farm, Battle, who, Lieut. Burton said, had been his client for many years. The Committee find the charges proved."

The PRESIDENT: A further letter has been received from Mr. Perkins, and I think we had better read it in the same way we did the other one. (The President read the letter). I propose that the name of Percival

Perkins be removed from the Register of the Royal College of Veterinary Surgeons.

Mr. BANHAM: I second that. [The resolution was put, and declared by the President carried].

The PRESIDENT: Now we come to applications for restoration of names to the Register.

The SECRETARY: The minute with regard to that is:—

"(a) Applications were received from Mr. Hugh Shelton Jones and Mr. Henry Bidlake for the restoration of their names to the Register, the same having been removed under Section 5, Sub-section (4) of the Act. *It was resolved to recommend*

"That the names of Mr. Hugh Shelton Jones and Mr. Henry Bidlake be restored to the Register of Veterinary Surgeons.

"(b) An application was received from Mr. Amos Wilkinson for the restoration of his name to the Register, it having been removed under Section 6 of the Act. This application was accompanied by testimonials of good conduct. *It was resolved to recommend* That the name of Mr. Amos Wilkinson be restored to the Register of Veterinary Surgeons."

The PRESIDENT: I move that the names of Mr. Hugh Shelton Jones and Mr. Henry Bidlake be restored to the Register of the Royal College of Veterinary Surgeons, and also that the name of Mr. Amos Wilkinson be restored to the Register of the Royal College of Veterinary Surgeons.

Mr. SHIPLEY: I second that. [The resolution was carried].

The PRESIDENT: Now we have to deal with the minutes of the meeting of the Registration Committee held on 1st July, 1915. Will somebody propose the adoption of the report?

Mr. BARRETT: I move the adoption of the report.

Dr. BRADLEY: I second it. [The resolution was put, and carried].

The PRESIDENT: Consequent on that I move that the name of Mr. J. P. Stapleford be removed from the Register of the Royal College of Veterinary Surgeons.

Mr. MULVEY: I second that. [The resolution was put, and declared carried].

The PRESIDENT: I also move that the name of Mr. Llewellyn Crook be removed from the Register of the Royal College of Veterinary Surgeons.

Dr. BRADLEY: I second that. [The resolution was put, and declared carried].

The PRESIDENT: I propose that the names of Messrs. T. A. I. Anderson, Charles Edward Doyle, H. S. Howard-Jones, and William Scott be restored to the Register of the Royal College of Veterinary Surgeons.

Mr. MULVEY: I second that. [The resolution was put, and declared carried].

On the motion of Mr. Lawson, seconded by Mr. Shipley, authority was given for the seal of the College to be affixed to the order for the prosecution mentioned in the report.

Sir STEWART STOCKMAN: With reference to the last list of names restored to the Register, does that signify to the public that they have been struck off for unprofessional conduct? Could you put it in another way?

The PRESIDENT: I suppose the report always contains information how it came about that the gentlemen ceased to be on the Register.

The SECRETARY: Yes, Sir.

The PRESIDENT: It is stated in the report that it was not for unprofessional conduct, but under Section 5 (4) of the Act.

PRELIMINARY EXAMINATION COMMITTEE.

Mr. MULVEY read the following report of a meeting of the Preliminary Examination Committee held on Thursday, July 1st, 1915:

Preliminary Examinations. The question of the conditions under which the Oxford and Cambridge Local

Examinations, the Preliminary Examination of the College of Preceptors and of the Educational Institute of Scotland, should be recognised was considered, and it was resolved to recommend:—

(a) That the Senior Certificate of the Oxford and Cambridge Local Examinations be recognised provided that the student has, at not more than two examinations, passed in (a) English Composition, (b) Mathematics (Arithmetic, Algebra, and Geometry), and in two of the following subjects: Latin, Greek, French, German, Italian, Spanish.

(b) That the Junior Certificate of the Oxford and Cambridge Local Examinations be recognised provided that the student has, at one and the same examination, passed in (a) English Language, and Literature (including Composition and Grammar), (b) Mathematics (Arithmetic, Algebra, and Geometry), and in two of the following subjects:—Latin, Greek, French, German, Italian, Spanish.

(c) That the Junior Certificate of the College of Preceptors be recognised provided that the student has, at one and the same examination, passed in (a) English Composition, Analysis and Grammar, (b) History, (c) Geography, (d) Mathematics (Arithmetic, Algebra, and Geometry), and in two of the following subjects: Latin, Greek, French, German, Spanish, Welsh.

(d) That the Preliminary Examination in General Education of the Educational Institute of Scotland be recognised provided that the student has, at one and the same examination, passed in (a) English Composition, Analysis and Grammar, (b) History, (c) Geography, (d) Mathematics (Arithmetic, Algebra, and Geometry) and in two of the following subjects: Latin, Greek, French, German, Spanish, Welsh.

Required Subjects. It was resolved to recommend: That the conditions as to required subjects for Preliminary Examinations be altered to read as follows:—

"Subject to the conditions indicated in the foregoing list, the Preliminary Examinations recognised by the Council are required to include the following:

- (1) English.
- (2) Mathematics (Arithmetic, Algebra, and Geometry).
- (3) and (4) Two of the following subjects: Latin, Greek, French, German or any other Modern Language, (Grammar; Translation into English from unprescribed books; Translation from English)."

Board of Education: First Examination.

Further correspondence from the Board of Education was read, and it was resolved

That the Secretary be instructed to reply to the Board that, having considered the subject, and as at present advised, this Council approves of the institution of the proposed School Examinations, and would be prepared to accept both the First and Second Examinations on condition that the Certificates included the following required subjects:—

- (1) English.
- (2) Mathematics (Arithmetic, Algebra and Geometry)
- (3) and (4) Two of the following subjects:—Latin, Greek, French, German or any other Modern Language, (Grammar; Translation into English from unprescribed books; Translation from English)."

Mr. MULVEY: I move the reception and adoption of the report.

Mr. CLARKSON: I second that.

Mr. HOWARD: If I am in order, before this report is adopted I think that we should consider the advisability of removing German from the list of modern languages and substituting Irish. (Laughter).

The PRESIDENT: As this syllabus has been drawn up in accordance with the wishes of the various Colleges, I

am certain there is no evil intention with regard to Ireland.

Sir JOHN M'FADYEAN: As an alternative suggestion, may we have Russian substituted?

Professor METTAM: Irish is already included under the term "Any Modern Language!"

The resolution for the adoption of the report was then put and carried unanimously.

EXAMINATION COMMITTEE.

Mr. MULVEY read the following report of a meeting of the Examination Committee held on Thursday, July 1st, 1915, and moved its reception and adoption:—

Examination arrangements. The SECRETARY reported that, with the approval of the President and the Chairman of the Examination Committee, the following interim appointments of Examiners had been made to replace Examiners unable to act for the July Examinations:—

CLASS A.

Anatomy	Mr. A. Gofton
Biology	Prof. J. Ainsworth-Davis

CLASS B.

Anatomy	Mr. T. Runciman, Jun.
Histology and Physiology	Prof. W. H. Thompson
Stable Management	Mr. W. J. Young (for Edin., Glasgow and Dublin)

CLASS D.

Veterinary Surgery	Mr. F. L. Gooch
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Educational Certificates.

(a) Educational Certificates numbered 1536 and 1537 were submitted and accepted.

(b) Certificate numbered 1525, accepted at the previous meeting of Council, was approved as qualifying the holder to take his first Professional Examination in July, 1915.

Mr. TRIGGER seconded the motion.

Mr. SHARE-JONES: May we take it that it will be a general rule for the future in regard to these divided certificates that the date of a divided certificate will be the date upon which the candidate took the first portion?

The PRESIDENT: No, it cannot be. Each certificate is considered on its merits by the Committee.

Sir JOHN M'FADYEAN: Will you allow me to state that that is the principle upon which the Committee decided to accept one of the certificates mentioned here? I take that they could accept another certificate in the same circumstances, and indeed by precedent would be obliged to, but to regularise the thing I suggest that somebody should give formal notice of an alteration in bye-law to that effect. It does not seem to me there is any objection.

Mr. SHARE-JONES: I am not stating whether I am in favour of it or against it, but it is a matter of great importance to a student when entering. Students will come forward with certificates of that kind. Either they are put back for a year or admitted on the off-chance that they might get through.

The PRESIDENT: That would necessitate an alteration of the bye-laws, which it is open to anybody to move.

Prof. METTAM: This is an important question. If you accept a certificate according to the first date of the certificate I can see that a difficulty may arise. A student, for instance, might enter a Veterinary College before he had completed his preliminary examination, and when it came to a question of signing him up he has already got his certificate on a date before he came into the College, although he had not completed his preliminary examination before he was really eligible, that is to say, the completion of a complete session.

Sir JOHN M'FADYEAN: He must have completed the examination.

Prof. METTAM: But he might put his certificate in as having been completed before he was examined.

The PRESIDENT: He could not.

Prof. METTAM: Take a concrete case. Supposing a student sat for two examinations to get a complete certificate, one in July and the other in December; can he enter College in October and go in for his examination in the following July, although he completes his examination while he is still a student in the Veterinary College?

The PRESIDENT: That is just the reason why we want the bye-law altered so that it may be accepted.

Prof. METTAM: I shall vote against it.

The PRESIDENT: This is a special case.

Mr. SHARE JONES: That is precisely what was done yesterday, and all I want to know is whether that is to be taken as a general rule.

The PRESIDENT: It is if you alter the bye law.

Sir JOHN M'FADYEAN: Am I right in supposing that until the bye-law is altered it can only be done with the consent of the Council?

The PRESIDENT: That is so.

Sir JOHN M'FADYEAN: I think perhaps you will also allow me to state as a pertinent fact that we were largely influenced in passing this resolution yesterday, or in making this recommendation, by the information communicated to us by our Secretary, to the effect that the General Medical Council does this, although their regulations are practically the same as ours; that is to say, the wording of their bye-law is practically the same, but in a case like this they do allow a student to present himself for examination, although during part of the time he had been studying professional subjects before he had completed his examination.

The PRESIDENT: It has to be with the consent of the Council. It is proposed and seconded that the report of the Examination Committee be adopted.

Prof. METTAM: I propose as an amendment that it be adopted with the elimination of that reference. I must do that to be consistent. I may as well be consistent.

The PRESIDENT: You are quite consistent in your inconsistency,—because it is by the power of the Council. The Council overrides the Committee altogether. The Committee could not possibly, according to our bye-laws, have allowed this man to come up, but the Council have power over the Committee.

Dr. BRADLEY: I should like to be quite certain whether the Council can undertake this alteration of the bye-laws. I would like to hear what the Solicitor says.

The PRESIDENT: Here is a man who has complied with the requirements, and we are wanting men.

Dr. BRADLEY: You will not get him for three years anyway. Let us hear what the Solicitor says—whether we can reconstruct the bye-law in that way.

Mr. THATCHER (Solicitor): There seems to be no bye-law which permits the Council to suspend the operation of the bye-law. I cannot find one.

The PRESIDENT: I put the resolution to you that the report of the Examination Committee be adopted.

The President having asked those in favour to vote, when the contrary was put Prof. Mettam said: No; I emphatically protest.

The PRESIDENT: The Ayes have it.

The resolution was carried.

PARLIAMENTARY & GENERAL PURPOSES COMMITTEE.

Dr. BRADLEY read the following report of a meeting of the Parliamentary and General Purposes Committee held on Thursday, July 1st, 1915:—

Admission of Women. A letter dated 19th May, 1915, was received from the Registrar of the University of

Liverpool, asking whether, in the event of women attending the necessary Courses in Veterinary Subjects in the Liverpool University, the Council of the College would be prepared to admit such candidates to their Examinations, and if successful, to issue Licences to practice to them.

It was resolved to recommend

That the Liverpool University be informed that the Council are advised that they do not possess the power to grant Diplomas of Membership to women.

Compulsory Pupilage. A letter was received from the Secretary of the Eastern Counties Veterinary Medical Society, communicating the following resolution passed at the Annual Meeting of the Society on March 9th, 1915:—

"That in view of the great scarcity of veterinary surgeons, the time has arrived to encourage the graduation of practical men; and that this can only be obtained by the compulsory pupilage of students for at least twelve months with a qualified veterinary surgeon, prior to being admitted as a student at any of the Veterinary Colleges. That this resolution be sent to all the Veterinary Societies, and to the Council of the College."

It was resolved that the letter be acknowledged.

Parliamentary Bills. The following Parliamentary Bills were submitted, but no action was considered necessary:—

Milk and Dairies Acts Postponement Bill.

Army Act Amendment (No. 3) Bill.

Orders of the Board of Agriculture. The Secretary reported the receipt of the Sheep Dipping (England and South Wales) Order, 1915.

Repairs to Premises. The Secretary reported that considerable repairs were necessary to the College building, and it was resolved

That the President and Treasurer be empowered to have executed such repairs as in their opinion are found to be necessary.

On the motion of Dr. BRADLEY, seconded by Mr. CARTER, the report was received.

Mr. SHARE-JONES: I assume that the advice with regard to the election of women was obtained from the Solicitor. I would like to ask if the Solicitor would give us, very briefly, the grounds upon which that advice is based.

The PRESIDENT: I do not think there is any objection, if Mr. Thatcher is ready to do so.

Mr. THATCHER (Solicitor): I do not pin myself right down to what I may say now. I will state my grounds to the best of my ability, but I shall consider myself at liberty to supplement them later on, if necessary.

Mr. SHARE-JONES: Quite so.

Mr. THATCHER: Mr. President and Gentlemen, I will admit at once that I am responsible for the advice that is mentioned in the report. I am of opinion that this College has not the power to admit ladies to examination or to admission. It is quite true that the words that are used, both in our Act of Parliament and in our Charters, are common to both sexes; the word in the Charters is "persons," the word in the Act is "students," which, of course, would cover both sexes. I was asked in Committee yesterday whether there was not some special Act of Parliament on the subject. I take it that what is referred to is The Interpretation Act, 1889, but I do not think that that affects the question, because Section 1 of the Act simply says that in any Act of Parliament passed since 1850 any words masculine shall also import the feminine, unless there is some reason to the contrary. We have, therefore, to consider what has happened which would, as one might say, negative the *prima facie* meaning to be attached to the words in the Act and the Charters; and that I think is done by usage and long precedent. In connection with this it is well worth our while to consider what has happened in

similar professions, and I propose to take the medical profession and my own branch of the legal profession, the solicitors.

With regard to the medical profession, I find that in 1865 the Society of Apothecaries gave their diploma to a lady, and they always claimed that they had the right to admit women to their examinations. However, they themselves seem to have had some slight doubt about the subject, for in the year 1875 they obtained an Act of Parliament which confirmed the right which they said they had. The leading case on the subject, so far as the medical profession is concerned, until 1875, was the case of *Jex-Blake v. Edinburgh University*. That was decided in 1873. One great difficulty in all these cases has been that in the medical profession people could be admitted to the degrees by different bodies, and each body claimed to have particular rights and particular duties. The University of Edinburgh derived their power from a Charter which was granted in the year 1588 by James VI. of Scotland, and he gave them the power to educate people in different things, amongst others in medicine, and to admit them to practice. The word used there is "scholarum." It is a Latin Charter, but the translation would be "scholars," which, of course, again would cover both sexes. In the year 1869, regulations were passed by the Senate of the College admitting women to be educated and to take degrees in medicine. It was found that there was a difficulty with regard to that, because some of the professors declined to educate women, and thereupon a lady brought an action in the Court of Sessions at Edinburgh to compel the Senate to educate and to admit. There was a full Court of Sessions,—I do not know the exact number, but a large number of Judges were there, and they seem to have disagreed upon different minor points, and even upon one or two of the main principles; but the final result was that, notwithstanding the construction that might be put upon the words of the Charter by themselves, yet from old usage and precedent women never having been admitted to the medical profession therefore they could not be admitted, and they were excluded. So far as the medical world is concerned, the matter was put to an end in the year 1876, when the Medical Qualifications Act was passed, Section 1 of which gave power to all bodies entitled to register to admit, without distinction of sex, both male and female students. There is just one thing I would venture to call the attention of the Council to in the wording of that Act, and that is that it did not give women the right to education and admission; it simply gave these bodies the power to admit them to education and the power to admit them to practice—a very different thing; that is to say, it gave them a right which from usage and old precedent the Legislature at any rate imagined they had not got before.

Then in my own profession, the leading case is *Bebb v. The Law Society* which was tried last year. The question there was whether a woman could be admitted as a solicitor, and in support of the contention that she could, Section 48 of the Attorneys Act of 1843 was quoted, which says that wherever the word importing the male sex occurs in the Act the female sex is to be considered as included. But yet, notwithstanding that, Mr. Justice Joyce, before whom this case came in the first instance, said that the foundation of the Common Law was usage and precedent, and that being the case he did not see his way to compel the Law Society to admit women, in fact, he said they had not the power. There was an appeal from that decision, and the three Judges of the Court of Appeal were unanimous; they all ruled on the same lines, that the thing depends upon usage and precedent, and confirmed the decision of the Court below.

The Veterinary profession, as compared with these two bodies, is of comparatively recent date; but what do we find so far as the veterinary profession itself is

concerned? We find that the Royal College of Veterinary Surgeons obtained its Charter in the year 1844, so that there is a period of 71 years during the whole of which time no woman has ever been admitted. The Highland and Agricultural Society of Scotland exercised the privilege of granting Veterinary certificates for 20 years,—from the year 1856 to the year 1876. Again, in that case, no woman was ever admitted. Here we come to the meaning of the word "students." Who were the persons contemplated by the Act of 1881 when the word "students" was used? In my opinion it would be the students who from time to time had come forward for examination. The Royal Veterinary College was founded in the year 1791, and during the intervening period of 124 years it has never had women as students at the College. The Dick College was founded in 1823, and during the period of 92 years no women have been admitted as students. The Glasgow College was founded in 1863, and, so far as I have been able to ascertain, no women have been admitted there as students. Then there was the New Veterinary College at Edinburgh and the Liverpool University, which are now practically the same.

Mr. SHARE-JONES: No.

Mr. THATCHER: Not quite the same. In the year 1897 a lady applied from the New Veterinary College for admission to examination, and she was declined, and there, so far as this College was concerned, the matter dropped. She did nothing more; she did not apply for a mandatory injunction. The Principal of the Scotch College from which she came instituted certain proceedings in Scotland, which were dismissed for want of jurisdiction. I simply mention that because a good many people imagine that the case was actually tried in a Scotch court: it was not. The question of whether a woman can be admitted or not has never yet been tried. My advice is founded on this:—that, looking back to a period of over 70 years, no woman ever having been admitted to veterinary practice, in my opinion the law of long usage and precedent prevails over what might be termed the reading of the Act and Charters, and I therefore have advised the College that they have no power to grant the request of the Liverpool University.

Mr. SHARE-JONES: I understand that our Solicitor gives that advice with the full knowledge that in every one of our modern Universities (which have not the long history that he refers to) every course of instruction and every degree is open to men and women on equal terms and conditions. That obtains in the University of London, in which there is a degree granted in veterinary science. According to the statutes of that University you cannot exclude women from taking the B.Sc. of London University, whether they are members of the Royal College of Veterinary Surgeons or not.

Sir JOHN M'FADYEAN: May I point out that there is no real analogy between the B.Sc. degree which is granted on veterinary subjects by the University of London and the diploma which is given by this College. I think it is a matter of common knowledge that the B.Sc. degree given by the University of London confers no right to practice, and London University was fully advised with regard to that point at the time the degree was instituted. It is simply a B.Sc.

Mr. SHARE-JONES: I quite agree. At the same time that B.Sc. in Veterinary Science could be taken by a woman just as well as it could be taken by a man, and that woman could call herself a graduate in Veterinary Science.

Sir JOHN M'FADYEAN: No. We could proceed against her.

Mr. SHARE-JONES: I do not think so, according to the Statute of the University.

The PRESIDENT: She must be a member of the Royal College of Veterinary Surgeons.

Mr. SHARE-JONES: No.

Sir JOHN M'FADYEAN : I think you are under a misapprehension. You seem to think that London University gives a degree called a Bachelor of Science degree of Veterinary Science. They do not.

Mr. SHARE-JONES : It is in their Calendar.

Sir JOHN M'FADYEAN : It is B.Sc., and then in brackets "Veterinary Science," but that does not mean it is a diploma.

Mr. SHARE-JONES : At the same time I am quite correct in stating that that degree could be taken by a woman, whether she possessed the diploma of membership of the Royal College of Veterinary Surgeons or did not.

Sir JOHN M'FADYEAN : I submit you are wrong in telling the Council that the holder of such a degree could advertise herself as possessing a qualification in Veterinary Science. She could not. We could proceed against her. I should like to hear the Solicitor's opinion on that—as to whether that would be using a name, title, or designation stating that she was qualified to practice as a veterinary surgeon. It is on the ground that it would imply that that I declared we could proceed against her. That is my impression.

Mr. SHARE-JONES : That is, if she got a degree under the conditions laid down she could not use the degree set out in the Calendar?

The PRESIDENT : I cannot allow this discussion to continue.

Sir JOHN M'FADYEAN : I am perfectly certain whether the possessor of the degree is a man or woman they cannot represent themselves as qualified to practice veterinary surgery unless they have the diploma of this College.

The PRESIDENT : Mr. Thatcher will shortly answer the point that has been raised. I think it is perfectly clear.

Mr. THATCHER : I think, Sir, with due deference to Mr. Share-Jones, that there is a distinction between a woman taking a degree which shows she has certain knowledge, and a woman taking a diploma which enables her to practise.

Mr. SHARE-JONES : I appreciate that.

Mr. THATCHER : For instance, take my own profession ; there is nothing to prevent a woman taking a degree in law, but you do not find any lady barristers or lady solicitors, and you will not.

The PRESIDENT : Dr. Bradley, do you move the adoption of the Report?

Dr. BRADLEY : Yes.

Sir JOHN M'FADYEAN : I second it.

The resolution was then put and carried.

ANNUAL FEE COMMITTEE.

The PRESIDENT : Perhaps Sir John M'Fadyean will briefly tell us what has been done in regard to the Annual Fee Committee since the last meeting.

Sir JOHN M'FADYEAN : I understand that it was by an accident or inadvertence that the Council has been led to expect from the notice on the agenda paper a report from the Annual Fee Committee. As a matter of fact there has been no meeting of the Annual Fee Committee since the Council last met ; but I think it is right the Council should be informed that since the April meeting of the Council I placed myself in communication with the Parliamentary Secretary of the Board of Agriculture and Fisheries and respectfully urged that the Government might give facilities for passing our Bill. I had from the present Parliamentary Secretary to the Board of Agriculture and Fisheries, Mr. Ackland, a very sympathetic reply, in which, however, he informed me that he had given the matter very careful consideration, and regretted to have to inform this Council, through me, that there was continued opposition to the Bill : and the Government is under a pledge not to give facilities for the passing of any private measure that is not unopposed.

Consequently our Bill has been thrown out for the present session. Many other Bills regarded by their promoters as being very urgent have suffered the same fate owing to the extraordinary circumstances in which we are living ; but, as I have already indicated at an earlier part of the proceedings to-day, I see no reason to come to the conclusion that we shall never get this Bill through. I may say, with regard to the opposition which was offered to the Bill during the present session, that I am led to believe that none of it is instigated by members of our own profession. (Hear, hear). I believe the opposition comes from a very few members of Parliament, and I understand they object to the Bill on what they would be pleased to describe as "general principles." (A voice : "Shame on them.")

The PRESIDENT : That is just a statement with regard to the Committee's work, and nothing else.

WAR EMERGENCY COMMITTEE.

The SECRETARY read the following report of a meeting of the War Emergency Committee held on Tuesday May 4th, 1915.

Requirements of the A.V.C. The Director-General, Army Veterinary Service, attended, and laid before the Committee the urgent need for additional officers for the A.V.C. It was resolved—

(a) That the President be authorised to issue an appeal to all members of the Royal College of Veterinary Surgeons who had graduated since 1895, placing before them the great need which still exists for officers for the A.V.C., and giving particulars of the conditions of service.

(b) That a letter be addressed to the Secretary of the War Office, suggesting that influence should be brought to bear upon the Board of Agriculture and Fisheries, and the Department of Agriculture and Technical Instruction for Ireland, to liberate any of their Veterinary Officers who were willing to respond to the appeal for service in the A.V.C.

(c) That a letter be addressed to all Administrations employing whole-time veterinary officers, urging that arrangements should, wherever possible, be made for veterinary officers desirous of serving with H.M. Forces to be released for that purpose, their work being carried on during the continuance of the war by other veterinary surgeons in the neighbourhood, over military age.

Maj. Gen. PRINGLE : May I state that since that was sent out, eight members of the Board of Agriculture have been released to join my Corps. (Hear, hear).

The PRESIDENT : That is very satisfactory, I am sure.

As Chairman of the Committee I propose the reception and adoption of the report. As one of the outcomes of the correspondence I want to state that commissions are now given to members of the profession holding employment under Government bodies, such as the Board of Agriculture, the Department of Agriculture in Ireland, and the Indian Civil Service, and those who have had five years' service are granted the rank of captain, which is certainly a great advance.

Mr. MULVEY : I second the adoption of the report.

The resolution was carried unanimously.

LIBRARY AND MUSEUM COMMITTEE.

Dr. BRADLEY read the following report of a meeting of the Library and Museum Committee, held on Friday, the 2nd June, 1915, and moved its reception and adoption :—

"Presentations to Library.—The Secretary reported that since the previous meeting of Council the following presentations have been made to the Library :—

Calendar of the College of Preceptors for the year 1915-1916 ; Reports of the Council and Auditors of the Zoological Society of London for the year 1914 ; Report of the Veterinary Surgeon to the Corporation of the City of Glasgow, 1914 ; Report on the Veterinary Depart-

ment of the Government of the Gold Coast for the years 1911, 1912, and 1913; Annual Report of the Veterinary Service, Ministry of Agriculture, Egypt, for the year 1913; Report of the Governing Body of the Lister Institute of Preventive Medicine for 1915; The Toxicity of Sodium Pyrophosphate administered in Food; with a note on Toxic Cotton Seed Meal, by Wm. Legge Symes and John Addyman Gardner; Bulletins of the U.S. Department of Agriculture, Washington, U.S.A.; The Rhodesian Agricultural Journal, February and April, 1915; Revue de Pathologie Comparée, March, April and May, 1915; The Journal of the Board of Agriculture, April, May and June, 1915; Orders of the Board of Agriculture and Fisheries; Leaflets of the Board of Agriculture and Fisheries; The Journal of Comparative Pathology and Therapeutics, March, 1915; The Veterinary News, Journal, and Record for the quarter; The British Medical Journal for the quarter; The Educational Times for the quarter; The World's Carriers for the quarter.

It was resolved

(a) That a vote of thanks be accorded to the respective donors.

(b) That the thanks of the Council be conveyed to the Proprietors of *The Veterinary Record* for their courtesy in inserting gratis an advertisement for books required to complete sets in the Library.

Purchases.—The Secretary reported that the following purchases had been made since the previous meeting of Council:—

Tropical Diseases Bulletin. Vol. v., Nos. 5, 6, 7, and 8.
Tropical Veterinary Bulletin, Vol. iii., No. 2.

Report of the Departmental Committee appointed by the Board of Agriculture and Fisheries to inquire into Foot-and-Mouth Disease, 1914.

Mr. MULVEY seconded the motion, which was carried unanimously.

PUBLICATION COMMITTEE.

Dr. BRADLEY read the following report of a meeting of the Publication Committee held on Tuesday, May 4th, 1915, and moved its reception and adoption:—

Annual Report.—The draft Annual Report was submitted, and, after emendation, was ordered to be printed and issued to the members.

Voting Paper.—A draft copy of the Voting Paper was submitted. As, however, only sufficient nominations were received to fill the vacancies, it was reported that no ballot would be necessary.

Mr. PRICE seconded the motion, which was carried unanimously.

APPOINTMENT OF COMMITTEES.

The PRESIDENT: I venture to suggest that as there has been no alteration in the membership of the Council the Registration, Examination, Finance, Parliamentary and General Purposes, and Annual Fee Committees be re-elected *en bloc*.

The resolution was unanimously adopted.

It was unanimously resolved that the Library and Museum Committee and the Publication Committee should be amalgamated under the new title of "Publication, Library and Museum Committee," and the following members were elected to it:—Messrs. O. C. Bradley, W. Burt, J. Coleman, J. Dunstan, J. McI. McCall, J. M'Fadyean, A. E. Mettam, W. J. Mulvey, T. S. Price, R. Pringle, J. T. Share-Jones, E. S. Shave, S. Stockman, and S. Wharam.

It was resolved that the Steel Memorial Committee, the Honorary Associates Committee and the Walley Memorial Committee should be amalgamated under the title of "Honours and Prizes Committee," and the following members were elected to serve on it:—Messrs. J. Abson, G. A. Banham, O. C. Bradley, J. W. Brittlebank, A. Lawson, J. McCall, J. M'Fadyean, J. McKinna,

A. E. Mettam, W. J. Mulvey, W. Packman, R. Pringle, S. Stockman, H. Sumner, and R. C. Trigger.

ELECTION OF AUDITORS.

On the motion of Dr. Bradley, seconded by Mr. Shipley, Messrs. Woodhouse and Wilkinson were unanimously re-elected Auditors for the ensuing year.

DATES OF COUNCIL AND COMMITTEE MEETINGS AND EXAMINATIONS.

It was unanimously resolved that the Council and Committee meetings for the ensuing year should be held on the following dates:—October 7th and 8th, 1915; January 6th and 7th, 1916; April 6th and 7th, 1916; July 6th and 7th, 1916.

On the motion of Mr. Barrett, seconded by Mr. Trigger, it was unanimously resolved that the Annual Meeting be held on June 7th, 1916.

On the motion of Sir John M'Fadyean, seconded by Mr. Barrett, it was unanimously resolved that the Examinations should be held on the following dates:—Written, December 10th; Oral, December 13th, 1915; Written, July 3rd; Oral, July 4th, 1916. It was also unanimously resolved that the Fellowship Examination should be held on May 14th, 1916, and the Walley Memorial Prize Examination on October 2nd, 1915.

NOTICES OF MOTION.

Dr. BRADLEY: I beg to give notice that at the next meeting of Council I shall move: "That the regulations for the Diploma in the Veterinary State Medicine Examination as adopted by the Council shall become Bye-laws."

The PRESIDENT: I have also to give two notices of motion. The first one has been up on the Board since June 7th, and is as follows:—"That in the event of a special examination being considered necessary by the President in September or October next, candidates who were rejected in a previous examination in class D be admitted to such special examination without being required to produce evidence of attendance at an affiliated Veterinary School in the interval, Bye-law 72 notwithstanding."

The meaning of that motion, if it is passed, is that a man who had once been up, or was eligible for going up, for his D examination will, without attending a College for ten weeks, be eligible to take the examination in September or October. I hope that all those who are now in the Army and have complied with the special requirements will take the means of standing for that examination and so becoming qualified.

I also give notice of the following motion: "10. The day for the meeting of the Council required by the Charter to be held within one calendar month after the Annual General Meeting, for the election of the President, two Vice-Presidents, Treasurer, Secretary and Registrar, shall be fixed by the President as early as convenient." We previously had six Vice-Presidents and we must now alter the figure to two.

Sir JOHN M'FADYEAN: I desire to give notice of my intention to move an alteration to the regulations with regard to the examinations in general knowledge which appear on page 93 of the Register under the heading, "Required Subjects." My intention is to move that the following be substituted for what there appears:—

"Subject to the conditions indicated in the foregoing list, the Preliminary Examinations recognised by the Council are required to include the following:—

(1) English.

(2) Mathematics (Arithmetic, Algebra, and Geometry).

(3) and (4) Two of the following subjects:—Latin, Greek, French, German, or any other modern language (Grammar; Translation into English from unprescribed books; Translation from English)."

Mr. MULVEY: I also give notice that I will move at the next meeting of Council: "That the alterations to

Schedule I. consequent on the report of the Preliminary Examination Committee be adopted."

This concluded the business of the Quarterly Meeting.

SPECIAL MEETING.

Immediately following the Quarterly meeting, a Special meeting of Council was held at which the same members were present as at the Quarterly meeting.

Minutes.—The Minutes of the last Special meeting, having been printed and circulated, were taken as read and confirmed.

Motion by Dr. Brudley.—Dr. BRADLEY formally moved the following motion, of which he had given notice:—"That the revised regulations for the Fellowship Degree be adopted as Bye-laws of the College, including alteration to Bye-law 98.

The following are the regulations:—

REVISED REGULATIONS FOR THE FELLOWSHIP DEGREE.

(Applying to the First Examination to be held under the provisions of the New Charter.)

1. Candidates must have practised the profession of Veterinary Surgeon for not less than two years since their graduation as M.R.C.V.S., and must be at least 23 years of age.

2. Applications, accompanied by a declaration as to age and practice, must be received not less than 28 days before the date of the examination, and must be accompanied by the fee of £15 15s. In case of rejection at any examination the sum of £10 10s will be returned.

3. Candidates must submit with their application a Thesis on the results of original research or observation on one of the following subjects:—

- i. Anatomy, including Surgical Anatomy.
- ii. Physiology.
- iii. Pathology, including Bacteriology and Protozoology.
- iv. Helminthology and Entomology.
- v. Pharmacology and Toxicology.
- vi. Medicine.
- vii. Tropical Medicine.
- viii. Surgery.
- ix. Sanitary Science and Administration (open only to holders of the Diploma in Veterinary State Medicine.

The Thesis must either be printed or type-written, and should not exceed 10,000 words in length. Quotations

must be indicated and references given. No Thesis can in any circumstances be returned to candidates, who are advised in every case to keep a duplicate copy. The Thesis should be signed by a *pseudonym* only, but should be accompanied by a declaration stating that the Thesis so signed is the result of the candidates original research or observation.

4. The Thesis shall be submitted to a special Committee who shall decide the section into which the subject matter of the Thesis falls. The Thesis shall then be submitted to two Examiners chosen by the President from the recognised list, who shall accept or reject the Thesis.

5. In the event of the Thesis being accepted, the candidate will be required to present himself for an oral examination on the subject matter of the Thesis submitted, and may, at the discretion of the Examiners, be examined practically or by written papers in that branch of Veterinary Science to which the subject of the Thesis belongs. This oral examination will be held at the Royal College of Veterinary Surgeons, or at such other place as may be determined. Due notice will be given to candidates who may be required to submit to a practical or written test.

Examiners.

(a) A Board of Examiners shall be elected, for a period not exceeding three years, consisting of not less than three nor more than five Examiners for each Section of the Examination.

(b) A fee of £2 2s. per student examined shall be paid to each Examiner

Form of Diploma.

The Form of Diploma shall be as follows:—

"THIS IS TO CERTIFY That Mr..... being a duly qualified Member of the Royal College of Veterinary Surgeons, and having submitted a Thesis and passed an Examination in the subject of..... is hereby declared to be a

FELLOW

OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.
By Order of the Council.

..... President.
..... Registrar.

Dated this

Alteration of Bye-law.

That Bye-law 98 be altered as follows:—

"An Examination for the Diploma of Fellowship may be held at such times and such places as the Council shall from time to time appoint, provided there be at

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders† (including Farcy)		Parasitic Mange.		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Out-breaks.	Slaugh-tered.*
IRELAND. Week ended June 26	...	...	...	...	...	...	Outbreaks 3		5	...	1
Corresponding Week in	1914	...	...	...	...	...	1	...	5	1	28
	1913	...	...	...	...	...	2	...	9	3	10
	1912	...	...	...	...	...	2	...	2	4	30
Total for 26 weeks, 1915	...	1	1	...	...	1	3	36	254	140	823
Corresponding period in	1914	...	1	1	75	955	...	...	49	347	643
	1913	...	...	...	...	...	...	...	92	319	509
	1912	...	2	2	...	...	...	...	45	257	1275

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, June 28, 1915

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection

least one Examination held during the year in the month of May."

Mr. SHIPLEY seconded the motion, which was carried unanimously.

Dr. BRADLEY also formally moved the following motion, of which he had given due notice:—

"That Bye-law 96 be amended as follows:—

96. The Diploma of Membership shall bear the signatures of the President of the College for the time being, and of the Secretary and Registrar, it shall be stamped with the Seal of the College, and be in the following form:—

"Know all men by these presents that the Board of Examiners appointed under the Royal Charter of Incorporation having examined M _____ and having found him fully qualified to practise the art and science of Veterinary Surgery and Medicine, he is hereby declared a Member of the Royal College of Veterinary Surgeons. By Order of Council.
President.
Secretary and Registrar."

Mr. LAWSON seconded the motion, which was carried unanimously.

It was resolved that the Confirmatory Meeting should be held on Tuesday, the 13th July, at 4.30 p.m.

On the motion of Mr. LAWSON, seconded by Mr. PRICE, a hearty vote of thanks was accorded to the President for his conduct in the chair, and the meeting terminated.

Royal College of Veterinary Surgeons.

EXAMINATIONS IN LONDON.

At a meeting of the Board of Examiners held in London on July 5th, 1915, for the Written, and on July 6th and 7th for the Oral and Practical Examinations, the following gentlemen passed their Final Examination:—

Mr. T. J. Bosworth	Mr. G. E. Oxspring
R. Dalling	R. H. Penhale
T. A. Dobie	H. C. Rockett
W. A. Macgregor	W. Shipley
W. R. McKinna	R. J. Stow
H. V. M. Metivier	P. R. Turner

The following passed their Third Examination:

Mr. S. C. J. Bennett *	Mr. D. A. Gilmor *
C. K. Calder	L. E. Prichard
A. Carter	G. C. Taylor
W. A. Dickinson	G. F. Watkins

The following passed the Second Examination:

Mr. H. R. Allen	Mr. K. A. Miles
T. F. Arnold	C. S. Northcott
E. Beaumont	L. P. Pugh *
T. Le Q. Blampied	E. A. Rucker
H. C. Driver	F. C. Scott
J. W. Knowles *	R. A. Thrale
T. J. Lewis *	

The following passed their First Examination:

Mr. J. H. Addis	Mr. T. H. Jones
G. N. Bushman	J. McCunnn
R. L. Cornell *	H. D. Neave
C. V. Dayus *	H. Thornton
E. T. Fern	W. A. Williams *
R. T. Howells	

Marked thus * passed with Second Class Honours.

Donation to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donation to the College Funds:—

Mr. J. F. D. Tutt, Winchester £1 1 0

ARMY VETERINARY SERVICE

Extract from *London Gazette*,
WAR OFFICE, WHITEHALL, July 2.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be tempy. Lieutenants:—

R. Elliott. Dated June 12.

C. H. Lambert. Dated June 14.

J. C. Thompson, W. Marshall, T. F. Donworth. Dated June 15.

W. Waters. Dated June 16.

July 3.

To be tempy Lieut.:—T. G. Heatley. Dated June 21.

July 5.

To be tempy. Lieuts.:—

H. Bidlake. Dated June 3.

W. A. Dellagana, F.R.C.V.S. Dated June 19.

June 5.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

To be Lieut.:—J. Somerville. Dated July 6.

July 6.

Lieut. A. R. Routledge, F.R.C.V.S., to be tempy. Capt. Dated June 3.

July 7.

Major A. S. Trydell, ret. pay, Indian Civil Vet. Dept., to be tempy. Lieut.-Col. Dated April 21.

July 1.

TERRITORIAL FORCE.

YEOMANRY.

To be Second Lieut.:—Cdt. C. Forsyth, from Royal (Dick) Veterinary College, O.T.C. Dated July 2.

Personal.

CHEESEMAM—THEELKE. On the 5th July, at Horley Parish Church, by the Rev. T. H. Lewis, M.A., Vicar, the Rev. Reginald Philip Ernest Cheeseman, M.A., Curate-in-Charge of Salfords, Horley, and Chaplain of Reigate Union, third son of the late Captain Edwin Thomas Cheeseman, A.V.D., to Theresa Mary, daughter of the late Capt. Charles Henry Theelke, of Carshalton.

OBITUARY

Mr. ROBERT BRYDON was the eldest son of the late Mr. Walter Brydon, Burncastle, Lauder, a man of sterling character and marked capacity as a flockmaster, Mr. Robert Brydon, immediately on taking his diploma, was appointed assistant to the late Mr. Charles Hunting, who had an extensive practice in the Sunderland district. He was subsequently appointed agent and farm manager for the Marquis of Londonderry, who at that time held and was developing the coalfields which brought into being the now thriving seaport of Seaham Harbour. Not only was he charged with the ordinary

duties of an estate agent, but he had the management of all the farms which the Marquis of Londonderry held in his own hands to superintend, the collieries to supply with draught horses for surface work, and ponies for underground haulage, the commissariat for horses and ponies to provide for, and the multifarious public duties to attend to which come in the way of a land agent. In the development of these tasks Mr. Brydon founded the Clydesdale stud which for more than 40 years has been associated with the Seaham Harbour farms and collieries; he established a Hackney and pony stud at Seaham Harbour, a Shetland pony stud on the island of Bressay in Shetland; he founded an Aberdeen-Angus herd on one of the farms, and bred and reared cross cattle of various types, including those from Shetland cows crossed with Aberdeen-Angus bulls on another. He studied everything that made for the advancement of agriculture in Durham, and was the moving spirit in the council of the county agricultural society. He took the leading part in establishing the horse breeding societies or clubs which now divide the county between them, and in every possible way laboured for the advancement of agriculture, and especially stock breeding.

About the year 1880 Mr. Brydon inaugurated the annual Clydesdale sales from Lord Londonderry's stud at Seaham Harbour, and these were for many years an annual spring fixture in the Clydesdale calendar. In later years these sales took place in the autumn, and continued to attract widespread attention until the dispersion of the stud a few years ago.

Many years ago Mr. Brydon boldly advocated the veterinary inspection of all stallions; and to back his opinion, and to encourage breeders to use such horses as had been examined and passed as sound, he presented to the Glasgow Agricultural Society for competition at the Spring Stallion Show the Brydon 100 gs. challenge shield, to be competed for only by aged and three-year-old horses which had passed a veterinary examination. He was the pioneer of veterinary inspection for breeding horses, at least in the North, and the Registers of the Board of Agriculture are but the keystone of work of which Mr. Brydon laid the foundation.

In 1900 the late Lord Londonderry converted his collieries into a limited liability company, and, to keep the farms and studs intact, Mr. Brydon founded the Seaham Harbour Stud (Ltd.). The farming and breeding operations were carried on by this company for several years, but in 1910 it was dissolved, and an unreserved sale of all the stock took place at Seaham Harbour on Tuesday,

22nd March, 1910. This was one of the best sales ever held in connection with the Clydesdale breed. Mr. Brydon was himself the buyer of many of the best stallions and mares, and he carried on the stud with increasing success as his own property until his death. He continued to discharge duty as the agent for the Marquis of Londonderry, and was full of activities up to the last. Mr. Brydon was for many years a member of Council of the Clydesdale Horse Society. He held office both as vice-president and as president. Whatever his hand found to do he did it with his might.

For several years past it was evident to Mr. Brydon's friends that he was becoming less physically robust than he had been, and that there was need for him to curtail his activities; but he appeared to forget that he had passed the allotted span, and was getting on into the seventies.

The writer, who can claim to have enjoyed the friendship and cordial good will of Mr. Robert Brydon, has never known, and never expects to know, a man more honourable, upright, and public-spirited. He ever acted in the public interest, and was singularly free in public business from prejudice and any disposition to urge a particular course because his own interest might lie in that direction. In the management of affairs, when feeling might be running high, he invariably endeavoured to find the middle way which reconciled all interests and made for the public good.

He is survived by Mrs. Brydon, a true-hearted English lady, daughter of his old friend, Mr. Charles Hunting, F.R.C.V.S., who proved a helpmeet indeed to a very busy man, and their two daughters, both happily married. The funeral, which took place on Thursday, was very largely attended.—*The Scottish Farmer*.

Lieut. JOHN WILSON BROWNLESS, M.R.C.V.S., A.V.C., who has died of wounds at the Dardanelles, was a North-country veterinary surgeon who had achieved a distinguished professional position in London. He practised at St. Mary Abbot's Place, Kensington, and at Barnes, and was veterinary surgeon to the Barnes District Council, and to the Polo Club, Ranelagh. In Polo circles he was very well known, and rendered great services in the selection and preparation of the ponies which were sent to America in Lord Wimborne's successful endeavour to recover the International Polo Championship. Whilst attending under fire to wounded horses of his brigade, he was struck by a shell.—*Live Stock Journal*.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered. *
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended July 3	10	11			2	5	30	49	1	107	894
Corresponding week in											
1914 ...	9	9			6	14	18	23		79	1067
1913 ...	6	6			5	11	34	113		66	574
1912 ...	11	11	33	179	3	8	32	59	1	62	726
Total for 27 weeks, 1915 ...	368	412			27	44	‡441	‡949	157	2439	11171
Corresponding period in											
1914 ...	450	480	11	74	59	156	1898	2479	147	2267	28638
1913 ...	323	343			93	254	1693	3495	121	1296	17611
1912 ...	508	538	37	217	90	188	2132	4716	163	1859	23567

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, July 6, 1915.

† Counties affected, animals attacked: Kent 3, Sussex, West 1,

‡ Figures for fourteen weeks only.

Lanark 1.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1410.

JULY 17, 1915.

VOL. XXVIII.

SCHEDULED DISEASE.

A fortnight ago the Board of Agriculture completed the returns of scheduled animal disease for the first six months of this year; and it is useful to compare the figures with those of the corresponding period in recent years. On the whole, with one exception, the report is an encouraging one.

Sheep-scab shows a slight increase—but so very slight that it need not be regarded seriously under our present conditions.

Anthrax has declined sensibly—this year's figures show a drop of 83 outbreaks from last year. More important than either of these—and perhaps the most satisfactory feature in the returns, is the fact that, so far this year, we have enjoyed complete freedom from foot-and-mouth disease.

Parasitic mange must be judged very cautiously. The Mange Order was suspended at the outbreak of war, and not re-introduced till March 27 last. We have thus only three months returns for this year; and many obvious factors render it very difficult to assess their true value. A week to week analysis of the figures suggests that, when the Order was re-enforced at least, there was almost if not quite as much mange in the country as there had been a year before. At present, there seems to be rather less—but it is a good thing that it has been found possible to re-introduce the Order.

We continue to make good progress against glanders. There were only 25 outbreaks in the six months—less than one outbreak per week, and rather less than half the corresponding figures for last year. June brought us much more glanders than any other month of the year; for at least 12 of the 25 outbreaks occurred in June, all either in London or its vicinity, or in Lanark. Prior to June, the country had seemed almost free from the disease, and these outbreaks in its old haunts need not discourage us. We may have other slight ups and downs with glanders yet; and we must be prepared for some reappearances of it after the war. But it is the only scheduled disease of which we can say confidently that we shall have stamped it from the country in a very few years time.

Swine fever, as usual, is discouraging. It shows an increase of 146 outbreaks over last year; and the figures for the half-year under notice average practically 90 outbreaks and over 400 pigs slaughtered every week. Science must advance, or legislation be made much more drastic, before we can hope to get rid of swine fever.

EXPERIMENTS WITH ANTI-ABORTION "A" TREATMENT.

By J. H. PARKER, M.R.C.V.S., Faringdon, and
G. R. BLAND, Agricultural Organiser, County
Offices, Oxford.

Dear Parker, I give below a few details about the Oxfordshire epizootic abortion experiments which I hope will prove useful to you.

1911-1913 EXPERIMENTS.

Herds.	Animals. "A" Treatment.	Controls.	Abortions p/c.		
			Before Inoc.	After Inoc.	Among Controls.
16	263	296	28.9	5.7	18.2

Summary of Results, 1911-1913.

Before experiments began (during 1910-1911)
28.9% (i.e. about 1 in 4) aborted

After anti-abortion

"A" treatment 5.7% (" 1 " 18) "
Among the Controls 18.2% (" 1 " 6) "

When it is considered that there was a tendency to inoculate all the animals it was thought most likely to abort, and that the animals under anti-abortion "A" treatment were on the average younger than those left as controls and therefore probably more likely to abort, the results are on the whole much in favour of the anti-abortion "A" treatment.

Aborted Cows, 1911-1913.

In most of the herds cows which had aborted were got rid of, and it was the exception for a cow which once aborted to be kept and bred from again, but 65 cows which aborted in 1910 were inoculated and records kept of their behaviour. The results were:—

4.6% (1 in 21) aborted again after treatment with anti-abortion "A."

40% (1 in 3) aborted again of those left as controls.

Heifers, 1911-1913.

A great deal of trouble had been experienced on some of the farms before the trials began owing to the number of heifers aborting. On those farms where the trouble was the greatest, most of the heifers were inoculated and very few left as controls. The effect of the "A" treatment on heifers was:—

(70 heifers inoculated; 51 left as controls)

5.7% (1 in 17) aborted after the treatment.

13.7% (1 " 7) " of those left as controls.

1913-1915 EXPERIMENTS.

During the last eighteen months 20 herds have been inoculated, and over 1200 cows and heifers are under the treatment, i.e., about 5% of the total

number of cows and in-calf heifers in the county. This shows how prevalent the disease is and the importance of continuing the treatment. The 1913 report is therefore only a temporary one, but the results indicated in it have been confirmed by the continuance of the work, for the results so far as they have been obtained promise to be quite as satisfactory.

I cannot give you the complete results for the 1913-1915 work, for in some of the herds the cows have yet to calve, but in 11 of the 20 herds the results are as follows:—

1915 RESULTS IN 11 HERDS.

(Inoculated 277: Left as controls 126).

Before experiments began (during 1913)

35% (i.e., about 1 in 3) aborted

After anti-abortion

"A" treatment 3.2% (" 1 " 31) "

Among the Controls 23% (" 1 " 5) "

Aborted Cows, i.e., Cows which had aborted in 1913.

(Inoculated 49: Controls 8).

4% (1 in 25) aborted again after treatment with anti-abortion "A."

12% (1 in 8) aborted again of those left as controls.

The above figures are taken from my address to the Berks and Oxon Chamber of Agriculture, and the Reading Dairy Farmers' Association on the "Oxfordshire Epizootic Abortion Experiments," on Saturday, July 3rd, 1915.

If you would like further particulars, I shall be pleased to give you what I can.

G. R. BLAND.

48 Kingston Road,
July 8th.

ABSTRACTS FROM FOREIGN JOURNALS

THE ABSORBABILITY OF POTASSIUM IODIDE BY THE SKIN IN DIFFERENT OINTMENT BASES.

Karl Bartenbach, of Backnang, Württemberg, a few years ago carried out a series of experiments upon the absorbability of potassium iodide in ointment form by the skin. He experimented with the horse, dog, ox, sheep, and rabbit; and his research included a test of the comparative values of adeps suillus, ung. paraffin, and lanoline as ointment bases. His most important conclusions are as follows:—

(1) The intact skin of the horse, dog, ox, sheep, and rabbit is permeable for potassium iodide in combination with adeps suillus, ung. paraffin, or lanoline.

(2) The ointment base which most favours the passage of potassium iodide through the intact skin is adeps suillus. Potassium iodide combined with paraffin ointment is not so well absorbed; while, when lanoline was used as the ointment base, very large quantities of potassium iodide were required to obtain a positive iodine reaction in the urine.

[The author gives tables of doses of potassium iodide which he found necessary to obtain a urinary

iodine reaction with the different ointment bases and in the various species of animals. So far as the horse and dog are concerned, these tables indicate that adeps suillus and ung. paraffin are equal from the point of view of absorbability, while lanoline is markedly inferior to them. With other animals, adeps suillus shows a distinct though not an exceedingly great superiority to ung. paraffin; and in these species the inferiority of lanoline is not quite so marked.]

(3) With all three of these ointment bases, the potassium iodide that is absorbed appears in the urine after an average period of two hours.

(4) With the doses used by the author, the period during which the iodine continued to be excreted by the urine never exceeded twenty-four hours.—(*Berliner Tier. Woch.*)

W. R. C.

(It must be remembered that these assertions, which controvert the accepted view as to the penetrating power of lanoline, only refer to its use in combination with potassium iodide.—*Trans.*)

Royal College of Veterinary Surgeons.

SPECIAL MEETING OF COUNCIL.

A Special Meeting of Council was held at the College, 10 Red Lion Square, W.C., on Tuesday, the 13th inst., when the following members were in attendance:—Mr. F. W. Garnett (President) in the Chair; Messrs. Banham, Barrett, Burt, Sir John M'Fadyean, Messrs. Mulvey, Price, Maj.-Gen. Pringle, Prof. Shave, Mr. Sloccock, Maj.-Gen. Thomson.

MINUTES.

The minutes of the previous special meeting were read and confirmed.

CORRESPONDENCE.

The SECRETARY reported that letters of apology for absence had been received from Mr. Howard, Dr. J. McI. McCall, Messrs. McKinna, Packman, Sir S. Stockman, Mr. Trigger.

ALTERATIONS TO BYE-LAWS.

On the motion of Gen. Thomson, seconded by Mr. Mulvey, the revised Regulations for the Fellowship Degree, and the altered Bye-laws 98 and 96, passed at the previous special meeting, were duly confirmed.

FINANCE.

The TREASURER reported that, in consultation with the Trustees, he had arranged with the bank for a loan of £8200 at 4½ per cent. for six months, to enable him to convert the £5100 Consols held by the College into 4½ per cent. War Loan.

Sir JOHN M'FADYEAN proposed, and Mr. Sloccock seconded, and it was resolved:—

(a) That the action of the Treasurer and Trustees be approved.

(b) That the Council undertake to make good any deficit which may be sustained through the sale of allotment £8200 War Loan in payment of the loan of £8200 from the bank standing in the name of the Trustees.

WAR EMERGENCY COMMITTEE.

The SECRETARY read the following report of the meeting of the War Emergency Committee, held on June 2nd, 1915:—

MINUTES.

The minutes of the previous meeting were read and confirmed.

REQUIREMENTS OF THE A.V.C.

The PRESIDENT reported that, as authorised at the last meeting, he had issued the following appeal to all members of the profession graduated since the year 1895:—

May 13th, 1915.

Dear Sir,

The Director-General of the Army Veterinary Service, on behalf of the Army Council, has again drawn the attention of the Council of this College to the need which still exists for Officers for the A.V.C. I have been directed by the War Emergency Committee, therefore, to bring to the notice of all Members of the College who have graduated since the year 1895, and who have not already joined H.M. Forces, the fact that qualified Veterinary Surgeons are still very urgently needed for the new armies. The Committee ventures to express the hope that every member will very carefully consider whether it is at all possible for him to make such arrangements as will enable him to give his services to the country in the present crisis of the nation's history.

The conditions relating to Temporary Commissions in the A.V.C. are enclosed herewith, and any further information which may be required will be supplied by the Director-General, Army Veterinary Service, 16 Victoria Street, London, S.W., to whom all applications should be addressed.—Yours faithfully,

F. W. GARNETT, President.

Maj.-Gen. PRINGLE stated for the information of the Committee, that up to date he had received 40 applications for Commissions as a result of the appeal.

The PRESIDENT reported that, as authorised at the previous meeting, he had sent the following letter to the Secretary of the War Office:—

14 May, 1915.

Sir,

Having been informed by the Director-General, Army Veterinary Service, of the urgent need which still exists for Veterinary Officers, I have been authorised by the Council of this College to bring the conditions of service in the A.V.C. to all Members of the Royal College of Veterinary Surgeons of eligible age, in the endeavour to obtain the services of as many suitable men as possible. This appeal will be addressed not only to members in general practice, but also to those holding official appointments.

In the case of members employed as Veterinary Officers by the Board of Agriculture and Fisheries, and Department of Agriculture and Technical Instruction for Ireland, I would suggest that if the influence of the War Office were exerted upon these two Departments, it might be found possible to make arrangements for a number of Veterinary Officers to be set free for service with the A.V.C. This would have especial weight if such officers were promised rank, pay, and allowances in accordance with their length of service with the Departments.—I am, Sir, Your obedient Servant,

FRANK W. GARNETT, President.

The Secretary,
War Office, Whitehall, S.W.

The SECRETARY reported the receipt of letters from Administrations employing whole-time Veterinary Officers, in nearly every case it being stated that officers either had been or were about to be released for military service.

It was resolved:—

That the Secretary be instructed to forward to the Secretary of the Department of Agriculture and Technical Instruction for Ireland a copy of the appeal issued to members, and to express the earnest hope of the

Council that any Veterinary Inspectors who may be desirous of serving in the A.V.C. should be released for the purpose, their work being, in the meantime, carried on as far as possible by utilising the services of private practitioners.

EMERGENCY EXAMINATION.

The question of the desirability of arranging for a special course of ten weeks instruction between July and October, 1915, and for a special Examination for rejected candidates to be held in October, was discussed, but no action was taken.

The President gave notice that at the next meeting of Council he would move to suspend Bye-law 72 for the purpose of enabling rejected students in Class D to present themselves at any special Examination which might be arranged without having to attend a further course of instruction.

On the motion of General Thomson, seconded by Sir John M'Fadyean, it was resolved that the report be adopted.

This concluded the business of the meeting.

EXAMINATIONS IN EDINBURGH.

The following passed their Final Examination:

Mr. J. Edgar	Mr. C. K. Lomas
W. Harley	R. K. Porteous
W. Hay	

The following passed their Third Examination:

Mr. T. Bannatyne	Mr. G. Howie
J. Brosnan	A. Rouse
J. D. Coutts	A. D. Sanderson
J. G. E. Gallie	

The following passed their Second Examination:

Mr. R. B. Crichton	Mr. J. Litt
T. Grahame	W. S. Petrie *
A. F. Lamont	J. P. Rice

The following passed their First Examination:

Mr. T. Brown	Mr. A. J. McCarmick
F. A. Davidson *	C. Machattie
G. Hislop	W. R. Wallace
F. J. Hood *	

EXAMINATIONS IN GLASGOW.

The following passed his Third Examination:

Mr. J. S. Keane

The following passed their Second Examination:

Mr. R. R. Moodie	Mr. D. G. Wishart
G. R. Bradley	H. M. Roemmele

The following passed their First Examination:

Mr. R. Scoular	Mr. J. H. Motion *
W. G. Jones	J. D. Ferguson
T. H. Michie	B. Sayer
A. Alexander	

EXAMINATIONS IN LIVERPOOL.

The following passed their Third Examination:

Mr. W. F. Aston *	Mr. E. P. Shallcross
	Mr. S. S. Herbert

The following passed their Second Examination:

Mr. E. A. Pearce	Mr. J. B. Garside
	Mr. W. L. Marshall

The following passed their First Examination:

Mr. E. V. Chadwick *	Mr. A. B. A. Stone
C. Hargreaves *	E. Varley
H. M. Salisbury	

Marked thus * passed with Second Class Honours.

EXAMINATIONS IN DUBLIN.

The following passed their Final Examination, and were registered Members of the Royal College of Veterinary Surgeons :—

J. A. Brew, Henry Street, Kilrush ;
J. M. Culhane, Charlestown House, Drogheda ;
T. A. M. Finch, Rose Hollow, Poyntzpass ;
J. J. Fitzsimons, Stapolin House, Baldoyle ;
W. H. Heaney, Ballylig, Culcrum ;
T. J. McDonald, Slaney Quarter, Tullow ;
G. K. Shaw, 15 Thorndale Avenue, Belfast ;
T. F. Tunney, Bridge Street Westport.

The following passed their Third Examination :—

Mr. E. J. Allen	Mr. J. Leigh *
J. Bell *	J. Malone
J. J. Condon *	E. S. W. Peatt *
T. A. Connolly	J. A. Power
S. J. Cotton	W. M. J. Rouse
J. M. Currie	C. B. Ryan *
F. H. Doyle	A. B. C. White
D. G. Grealy	J. J. English
E. V. Kelly *	

The following passed their Second Examination :—

Mr. J. T. Alcock	Mr. J. G. Hoban
S. Conway	T. Hodgins
S. R. J. Cussen	R. W. M. Mettam *
T. J. Eastwood †	A. H. Morris
R. Gorman *	H. O'Neill †
A. A. Hayman *	W. Walsh

The following passed their First Examination :—

Mr. S. Anderson	Mr. T. J. Hurley
D. Brophy	T. Kelleher *
A. J. Devine	J. A. McCutcheon
T. J. Egan	J. J. O'Donovan *
C. A. Ewing	R. J. Roe
T. Fitzpatrick	W. L. Smyth
J. N. J. Hagan	W. F. White *

Marked thus † passed with First Class Honours.

Marked thus * passed with Second Class Honours.

VICTORIA VETERINARY BENEVOLENT FUND

The Quarterly Meeting of Council of the above Fund was held at 10 Red Lion Square, London, W.C., on Thursday, July 1st, at 5 p.m.

There were present :—Mr. S. H. Slocock (in the Chair), Messrs. P. J. Howard, W. F. Barrett, E. Alfred West, F. W. Garnett, N. Almond, Geo. Banham, Sir Stewart Stockman, Wm. Shipley (Hon. Sec.), and others.

On the proposition of Mr. N. Almond, seconded by Mr. E. A. West, the minutes of the previous quarterly meeting, as published in the Veterinary Press, were taken as read.

ELECTION OF OFFICERS.

At the unanimous request of all the members, Mr. S. H. Slocock consented to continue in his office of President for the ensuing year.

Vice-Presidents. Messrs. Geo. Banham, P. J. Howard, N. Almond, and C. Sheather, were unanimously elected.

Hon. Secretary and Treasurer. Mr. Wm. Shipley was elected for the ensuing year.

SECRETARY'S QUARTERLY REPORT.

In presenting my report I must apologise for its brevity. Indisposition on my part, and the many claims on the charity of veterinary surgeons have prevented the customary increase of subscribers.

I need hardly point out that the need for help is greater than ever. I have received one application for

assistance. I have been, and am, in correspondence with reference to this case, but am unable to make any recommendation to the Council at present.

Acting on your instructions we have become members of the "Charity Organisation Society." I have had no need, however, to avail myself of their help at present.

This, the first quarterly meeting after the annual general meeting, is the occasion on which the President, four Vice-Presidents, and Secretary and Treasurer should be elected.

Special thanks are again due to several ladies and members of the profession for their efforts to obtain votes for the election of Lawrence B. Farr. I am not yet in possession of the figures as to the amount of votes polled, but know there has not been sufficient to secure his election.

LIST OF NEW SUBSCRIBERS AND DONATIONS RECEIVED SINCE LAST QUARTERLY MEETING, APRIL 8TH.

Subscriptions.

Andrews, W. F.	£1 0 0
Cartwright, Lieut. C. W., Llyswnn	10 6
Morgan, Lt.-Col. H.	2 2 0
Oliver, G. A. Glasgow, Scotland	10 6
Parkin, H. J., East Ham, Essex	10 6
Parsons, C. C., Launceston, Cornwall	1 0 0
Phillips, Lt.-Col. J. J., Broadstairs	1 0 0
Phipps, E. A., Bandon, Co. Cork, Ireland	10 6
Somers, H. L., Ealing, London, W.	1 1 0

Donations.

Parr, G., Salisbury, Wilts.	2 2 0
Dewar, Prof., Edinburgh, Scotland	9 6
Blake, A., Municipal Vet. Surg., Rangoon, Burma, India, per Sir J. M'Fadyean	10 0 0

CORRESPONDENCE.

A letter was received from Mr. Armiger. It was resolved to thank those members of the profession and the ladies who have helped to obtain votes in this case, and also resolved to persist with the candidature, and request further help and assistance to endeavour to secure the election in January next.

The Council appreciated the great amount of work entailed in order to secure so many votes on the first occasion.

A letter from Sir John M'Fadyean, enclosing a donation of ten pounds (£10) from Mr. Arthur Blake, Municipal Veterinary Surgeon, Rangoon, Burma, India. On the proposal of Mr. G. Banham, seconded by Mr. E. A. West, a hearty vote of thanks was accorded to Mr. Blake for his generous help.

The Council duly considered one fresh application for assistance, and much regretted they were unable to make any allowance to the applicant at the present time.

It was resolved that the grants to the old recipients should be continued.

ANNUAL REPORT OF CHIEF OFFICER VETERINARY DIVISION, UNION OF S. AFRICA.

This is a well written history of the work of the official year 1913-14, and is again evidence of the amount of administrative work that falls to the share of the veterinary surgeon in our oversea Dominions. Mr. Gray points out that the outstanding trouble is East Coast Fever, and devotes much space to the measures taken and results attained ; from this we have taken the following extracts which show some of the varied difficulties, and how they are met.

EAST COAST FEVER.

Cape Province.—In this Province work of a most strenuous character has led to a material check in the

progress of the disease, and in both East London and Kingwilliamstown Districts the improvement in the position is most marked. It must not be inferred, however, from these preliminary remarks that we have had no set-backs, but, compared with the progress made and the work which has been accomplished, these are of minor importance.

At the end of March, 1913, the prospects of holding the disease in check were none too promising. The position demanded the personal attention of a Senior Officer, and Mr. Dixon, Senior Veterinary Officer, was sent to East London, to take up his headquarters there, in order that he might be better able to gauge the requirements of the situation in the two infected Districts; and from March to September the greater part of his time was given to this work, assisted by two Veterinary Surgeons and a small staff of Stock Inspectors and Special Police. Particular attention was paid to the dipping and hand-dressing of all cattle running on the various infected areas: a central dipping tank was constructed at Government expense in the original infected area, at Paardekraal, East London Division, and the cattle belonging to residents thereon and those belonging to farmers on adjacent infected areas, who could not—or would not—provide themselves with dipping facilities, were concentrated at the Government tank, where they were dipped in a five-day dip and hand-dressed under the supervision of the Government. As a result of these measures the activity of the disease has been checked, and already we are in so satisfactory a position that four farms in East London are due to come out of quarantine; three more should come out at the end of April and, if all goes well, three more will be clean at the end of June: and, when I mention that only ten animals out of 2,951 have died on the East London and adjacent Commonages of Amalinda and Cambridge, which are infected with the disease, and that the last death occurred thereon in March, 1914, those who have had experience in dealing with East Coast Fever will admit that the work taken in hand by the Department has been carried out with a good deal of thoroughness.

In Kingwilliamstown a campaign of a similar arduous character has been conducted, under Senior Veterinary Surgeon Dixon's direction, by Government Veterinary Surgeon Nicol with the assistance of Mr. Gilfillan, Assistant Resident Magistrate, Kingwilliamstown, who has been indefatigable in his efforts to bring the Native community, amongst whose cattle the disease originally appeared, into line with our requirements, and the success which has attended their labours has been most noteworthy.

Although the work done in East London and Kingwilliamstown has been very satisfactory, I regret to say that the Cape Province is now menaced with invasion from other points. In one instance the source of infection was clearly traced, as the original owner amongst whose cattle the disease broke out, and who had animals suffering from the disease in Native territory adjacent to the farm Arisaig, undertook to inoculate his cattle with material taken from an infected animal, having apparently gained some insight into our methods of inoculation as practiced in Native territory. In consequence of these experiments by this Native, the disease broke out amongst his animals; the infection speedily spread to four other farms, all tenanted by natives, and as no tank was available, the mortality was very considerable before one could be erected, but it is now in working order and the cattle surviving are being dipped under European supervision; while, on the neighbouring farm to which the infection extended, other tanks have also been built, so that all cattle in this centre are now receiving proper attention.

This completes the tale of East Coast Fever outbreaks in the Cape Province, and for further particulars the

reader is referred to the tabular returns contained in Appendix "A" attached to this report; but, although we have not, so far, any reason to complain of the lack of success attending our efforts to keep the disease in hand, the Cape Province is still in a most precarious position, and with an extensive native area in which the disease is prevalent, lying along its border, stockowners in these Districts adjacent to the Transkei should avail themselves of the present days of grace to equip themselves with dipping tanks and to begin dipping operations, as it is expecting too much to assume that no further outbreaks are likely to occur; while they would also be well advised to restrict movements of cattle for transport purposes as much as possible.

Transvaal.—In this Province, except in the case of the District of Piet Retief, considerable progress has been made in the eradication of this disease. Why Piet Retief is in such a backward condition it is, perhaps, difficult to say. Whatever the cause may be, it can at least be said that the situation is such as might be expected to arise in a district in which local farmers as a whole were not in sympathy with the efforts of the Department to stay the spread of the disease and are impatient of restraint, otherwise more progress should have been made in a district which is so thoroughly patrolled by a staff of Special Police.

Forty-one farms have been removed from quarantine during the year, and there have been only fourteen fresh outbreaks. One encouraging feature of the position is the amount of attention that has been paid to departmental recommendations respecting the erection of dipping tanks. This is particularly the case in the districts of Barberton, Lydenburg and Pietersburg-Zoutspanberg, in all of which the resident magistrates have strenuously supported the policy of the Department, and in which a considerable number of cattle dipping tanks have been erected and are being used, both by Europeans and natives, with very gratifying results (for details, see Appendix). It looks at the moment as if there is some reason to hope that the worst is past, although long experience with the vagaries of East Coast Fever does not dispose one to be optimistic.

Natal.—In Natal the work is proceeding slowly, but on the whole in a satisfactory manner. During the year ending 31st March, 1914, there have been seventy-six fresh outbreaks of this disease as compared with 213 outbreaks last year, and in commenting upon the position Senior Veterinary Surgeon Power expresses the opinion that in some instances these so called fresh outbreaks do not represent fresh infections of clean areas, but are simply instances in which the disease has been smouldering since it first broke out some years ago. This is particularly likely in areas in outlying portions in districts which are only occupied by native tenants, as occasional deaths occurring amongst native cattle are not invariably reported to the Authorities, and where there are a comparatively small number of susceptible cattle grazing over a large area such cases of disease may easily be overlooked.

There has been considerable activity displayed in the construction of tanks in the Vryheid district, fifty-nine having been built during the year, bringing the total number up to 111. One of the disabilities under which the Vryheid district has laboured in the past through the existence of infection on farms belonging to non-resident owners, upon whom no pressure could previously be brought to bear to compel them to erect tanks on their holdings, has now been overcome by the exercise of powers obtained by the Minister of Agriculture during last Session, whereby such owners can now be served with notices requiring them to construct tanks within a specified period, and, in the event of their failing to do so, tanks can be erected on their farms by Government at their expense. It is hardly necessary to say that the

service of such notices, sixteen in all in this district, has not given unqualified satisfaction to absentee owners, but resident farmers have expressed their appreciation of the action taken by the Government. In many places, indeed, farmers are showing a disposition to urge the Department to go one better and make it a condition generally that owners of farms, even if these farms were clean, should be compelled by law to provide facilities for the dipping of any cattle running thereon. That this is desirable admits of no question, but for the present I am of opinion the Department is well advised to devote their attention to infected farms and to press for the erection of tanks thereon as a preliminary to dealing with the matter on a larger scale, as, if this were attempted at the present moment, we might lose sight of the weak spots in our line of defence, *i.e.*, the infected un-tanked farms, where dipping operations are more necessary than they are on those farms upon which the disease does not exist.

In Ladysmith and Bergville divisions our main difficulty in coping with the disease is, again, the absentee landowner whose farm is occupied by natives and infected with disease. All absentee owners in these divisions have been warned to erect tanks; many have done so, and in the case of those who have not, final warnings have been sent out, and if these are disregarded the Department will then proceed to erect tanks at the expense of the owner.

In the Divisions of Polela and Ixopo, Senior Veterinary Surgeon Power states progress is being made in the eradication of the disease. In Ixopo the position still requires careful handling; while in the southern part of the Province there are good grounds for saying matters are not so satisfactory. It must not be inferred that a large section of the community are not doing their best to keep their farms clean and that their efforts are not successful to a very marked degree, but in these divisions there is a considerable area of low country occupied by half-castes, Indians, natives, and, in some cases, by a poor class of European, who are at all times very difficult to deal with; and in large native locations in these parts dipping facilities have only recently been provided, and sufficient time has not yet elapsed to permit of things being got in proper working order.

Of all areas in Natal, Zululand is the one presenting the greatest difficulties so far as the control and suppression of disease are concerned. When a large area like Zululand occupied by natives has become thoroughly contaminated it is exceedingly difficult to determine whether any particular portion thereof has become clean by lapse of time or whether the disease is still kept alive by occasional deaths amongst the susceptible progeny of the immune animals which have survived the first invasion; added to these, the use of immune animals for transport purposes has also contributed to the uncertainty of the position, and there is little doubt that for a very considerable period Zululand will remain a menace to the European farmers resident on its border and in those parts of the territory recently thrown open for European settlement. Steps have been taken, however, to provide dipping facilities for natives, especially in those parts of Zululand lying nearest the European settlements, and dipping has been preached to natives as a means whereby they will clean their country and will ultimately be in a position to re-stock it. Lack of adequate funds to carry out this policy in a sufficiently thorough manner simultaneously throughout the infected area, must necessarily militate considerably against the successful prosecution of a dipping campaign, but a start has been made with this work, and if a measure of success is obtained in the areas in which it has been begun it will doubtless encourage the native to make further efforts to work out his own salvation. My own view of the position is that it would be a profitable investment to expend a larger amount of public

money in dealing with this very important matter, as parsimony may spell failure, and if, by our efforts, we only succeed in convincing the native that we are unable to stamp out the disease in those areas in which the work is begun, we may look for a good deal of opposition, both active and passive, to the extension of the policy to areas more remote.

Another point calling for consideration is the absence of any definite policy for the erection of dipping tanks and the dipping of cattle belonging to native owners residing outside of native locations on the Crown lands, which form so large a portion of Zululand.

In those parts of Zululand in which the Native Affairs Department have made a start with the dipping of native cattle this difficulty does not exist, as most of the Crown lands have been taken up by Europeans, who in their own interests are seeing to the dipping of their cattle, but when we go further afield and begin work in those parts of Zululand in which the Crown lands have not been taken up, the question of providing dipping tanks and supervision for native cattle on Crown lands is one which must be faced, and can only be dealt with in a satisfactory manner by the expenditure of public money for this purpose.

In preparing for the work of dipping native cattle in various locations throughout Natal, the Native Affairs Department have already erected about 250 tanks, thereby bringing the approximate total of cattle dipping tanks erected in Natal to about 3000.

Transkei.—The problem of dealing with East Coast Fever in an infected area like Transkei, over 16,000 square miles in extent and occupied by a native population, is obviously formidable, and during the past year the small staff working in this territory, under the supervision of Senior Veterinary Surgeon Spreull, has been hard put to it to cope with the situation, much of their work being carried out under very unfavourable conditions.

During 1914 there have been 150 outbreaks of East Coast Fever—only two-fifths of the number met with during the previous twelve months. This falling off has been due, not so much to any check which the disease has sustained in consequence of the operations conducted against it, but rather to the lack of new worlds to conquer, as almost the whole of the low-lying and coastal districts in the Transkei have been overrun with the disease. There it spread with great rapidity, and is now making more tardy progress in those parts of the native territory where the altitude is greater and where tick life is less abundant and conditions are less favourable for the spread of infection, but it is only in those parts of the Transkei occupied by a European farming population that the work of combating its spread is being carried out with such a degree of thoroughness as to give grounds for hoping its progress will be stayed.

From this it must not be inferred that nothing is being done in purely native areas to hold the disease back and to stamp it out. All through the native territories the erection of dipping tanks by the Transkeian Territories General Council is going steadily on. Although by inoculation large numbers of cattle have been saved which would otherwise have succumbed to the disease, it is undoubtedly to the dipping tank we will have to look for the cleaning up of the territory, and this is not likely to come to pass until the number of tanks is materially increased and a thorough and systematic dipping campaign can be inaugurated and carried out.

Inoculation operations have now slackened off considerably, as in most areas in which the disease progressed rapidly a considerable number of natives have already availed themselves of the opportunities offered them for immunising their animals, and now that the disease has invaded those parts where it progresses

more slowly natives do not quickly realise the necessity for subjecting their animals to a process of inoculation, which involves the loss of a very considerable proportion of the cattle subjected to it. During the year the number of animals inoculated has been 67,960, bringing the total number of animals treated by the staff up to the more than respectable figure of 275,512. I am of opinion, however, that the time is now approaching when this form of treatment should be discontinued and native cattle owners should be compelled to depend upon their dipping tanks to work out their salvation.

In the earlier days of the invasion of the Transkei by East Coast Fever there were many excellent reasons for inaugurating a system of immunisation which, crude though it was, enabled owners of transport animals to keep them on the road and supply the needs of the native and European population, but with nearly a quarter of a million head of immunised cattle in the country it cannot be argued that there is any longer any necessity for adding to their number, particularly when it must be borne in mind that these immunised cattle will most certainly add to our difficulties when the time arrives for cleaning up, as the progeny of immune cattle will everywhere tend to perpetuate veld infection and render the eradication of the disease more difficult. Even if this work is discontinued in the future, and the native is, so to speak, brought to the dipping tank and invited to dip his animals, much will have to be done before he can be convinced of the necessity for doing so, as there is no room for doubt that the majority of natives have no idea as to how this disease is spread. That the disease is disseminated by ticks the native does not believe and, while it may be possible to satisfy him that the dipping of susceptible cattle protects them in some way against disease, when he is informed that in order to stamp out the disease and prevent its future recurrence it is necessary to dip his salted cattle as well, he is incredulous, and cannot see that the dipping of animals which have once had the disease and are not likely to get it again can be beneficial to anyone. Dipping certainly does not improve the working capacity of transport cattle, a point which he regards as being of considerable moment, and how the dipping of such immunised animals can do any good to those cattle who have not yet been attacked by the disease he is unable to understand. Memories of rinderpest experiences also prejudice him against listening to warnings of the impossibility of re-stocking at an early date on account of the long persistence of veld infection, and no amount of preaching will convince the average native who saw rinderpest sweep through these territories nearly twenty years ago, that the purchase of cattle and their introduction into an area in which no deaths have occurred for several months is likely to be followed by loss until he has tried it, and as a consequence natives and unscrupulous Europeans have come forward to supply the demands which have sprung up at various times for raw cattle in old infected areas, by the illicit movement of susceptible cattle, with very unsatisfactory results so far as their customers have been concerned.

When we turn from those areas occupied chiefly by natives to those held by Europeans, the situation is very different. Almost all farms are fenced, and the majority of farmers have either got dipping tanks of their own or have an interest in a joint tank erected near the boundary of two or more holdings, with the result that if East Coast Fever does happen to make its appearance on their farm it is speedily checked and is soon stamped out. This is notably the case in the Mount Currie district, in which there have been five outbreaks of East Coast Fever during the past year, with the mortality of only twenty-seven head, and on many of the infected farms the disease has been checked with the loss of only a single animal.

Before passing on to the consideration of other subjects there is one point to which public attention should be most particularly directed. This is a matter affecting those parts of the Union to which East Coast Fever is still a stranger. The idea is still held by many farmers in certain parts of the Union remote from infection that there is something so remarkable about the climatic or local conditions in these favoured localities, that if the disease by any extraordinary accident should be introduced it would not live and would speedily "die out," and on that account preparations to fight it are unnecessary, and the construction of dipping tanks for that purpose is a simple waste of money. Now, it may be accepted without any hesitation that wherever there are ticks, even in small numbers, tick borne diseases may obtain a footing at any time and give rise to serious loss, that there are few, if any, localities in which East Coast Fever would not be likely to establish itself, and it is, therefore, incumbent upon every progressive farmer to provide himself with a cattle dipping tank and to dip his cattle therein. These remarks apply with particular emphasis to the Free State, to certain districts of the Transvaal and to the Cape Province, in many parts of which ticks are both abundant and troublesome, and where to-day cattle dipping tanks are remarkable only for their scarcity.

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, July 8.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temp. Lieutenants:—

F. W. Cosgrove, C. W. B. Sikes, L. H. Leach, J. McK.

Brown, C. J. Clibborn. Dated June 21.

J. H. Taylor, F.R.C.V.S. Dated June 22.

July 9.

Majors to be Lieut.-Colonels:—

G. M. Williams, Brev.-Lt.-Col. F. W. Wilson, W. J.

Tatam, H. J. Axe, E. E. Martin. Dated July 10.

Captains to be Majors:—

J. J. Aitken, A. F. Deacon, H. C. Welch, O. S. Fisher,

H. Gamble, B. L. Lake, G. P. Knott, G. T. T.

Jackson, W. C. Lowe, A. N. M. Swanston, C. E.

Steel, E. S. Gillett, E. C. Orton, M. St. G. Glasse,

W. H. Nicol, F. S. Probyn, H. S. Mosley, N. d'E.

Roberts, F. Fail, F. A. S. Moore, W. Ludgate, R. A.

Plunkett, W. A. Jelbart, J. Nicholas, S. F. G. Pallin,

J. J. B. Tapley, H. Allen, E. S. Oliver, H. Greenfield,

W. E. Schofield, E. C. Webb, E. J. Wadley, J. R.

Steevenson, W. W. R. Neale, H. E. Gibbs, R. C.

Matthews, H. T. Ryan, A. Leaning, E. P. Argyle,

D. Macdonald, H. J. Holness, A. J. Thompson,

F. C. O'Rorke, T. A. Nicholas, H. Kirby, T. E.

Burridge, L. M. Verney, F. W. H. Thomas, H. C.

Dibben, E. Edgar, H. M. Williams, K. McL.

McKenzie, J. S. Nimmo, J. Ashmead Bosley, E. C.

Russell. Dated July 10.

To be temp. Lieut.:—W. Lenten. Dated June 10.

July 13.

To be temp. Captains:—

Capt. C. Humm, late Australian Forces. Dated

June 13.

F. C. Gavin. Dated June 28.

To be temp. Lieuts.:—

L. D. Swenerton. Dated June 18.

D. W. Morgan, W. P. Ruthven. Dated June 28.

R. L. Lewis. Dated June 29.

G. S. Arkcoll, W. Anderson. Dated June 30.

E. Evans. Dated July 1.
J. Macfarlane, D. Starkey. Dated July 2.
M. J. Reidy. Dated July 3.

July 14.
Capt. L. L. Manchester, Australian A.V.C., to be
tempy. Capt. Dated July 15.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

July 13.
To be Lieut. :—H. E. Jackson. Dated July 14.

July 14.
To be Lieutenants :—
H. McCartney, W. Hall. Dated July 15.

The following casualty in the Expeditionary Force is
reported from the Base under date June 26 :—
DIED—Private A. G. Morgan, 395. A.V.C.

MEDITERRANEAN EXP. FORCE. ARMY VET. CORPS.
The following casualty is reported under date July 2 :—
WOUNDED—Lieut. H. C. Lowry.

OVERSEA CONTINGENTS. CANADIAN A.V.C.
WOUNDED—Private W. Miller, 34715.

Donation to R.C.V.S.

The Secretary of the Royal College of Veterinary
Surgeons begs to acknowledge the receipt of the fol-
lowing donation to the College funds :—

Capt. W. G. Evans, A.V.C. £1 1 0

Organization !!

During the time the Honourable Artillery Company
were stationed at Rainham Camp a number of Monte
Video cow forequarters of beef were tendered in such a
putrid state that their condition was immediately ap-
parent, and, certain members of the corps coming from
Smithfield, such stringent representations were made to
the commanding officer that the meat was finally buried
in a trench. It is stated that among the privates de-
tailed to dig the trench was the Superintendent of
Smithfield Market, who lined up for service when war
was declared, and for whose expert knowledge and
specialised training the enlightened War Office could
find no better use.—*The New Witness*.

Sheep and Water.

Judging by their practice, some men still appear to
believe that sheep can do without water. In spring
lots of feeding sheep folded on turnips and getting hay
and dry trough materials in addition must be in need of
a mouthful of water at times, as there is not enough
of moisture in the roots to prevent an occasional sense
of thirst. During a dry summer also such as the present,
ewes with lambs at foot are sometimes confined in un-
watered fields. That is exceedingly stupid and cruel.

Personal.

Last week Mr. J. Share-Jones was made a Doctor of
Veterinary Science at the Liverpool University. He is
the first holder of such a title in this country, though
the degree is more common on the Continent. Since the
Department of Veterinary Anatomy was founded eleven
years ago, Dr. Share-Jones has been its active and
estimable chief, and a point of interest is that last year
his wife gained her LL.B. with first-class honours at the
University, and holds the record of being the first lady
graduate in law.—*Meat Trades Journal*.

OBITUARY.

F. MOSEDALE, M.R.C.V.S., Finsbury, E.C.
Graduated, Lond. : May, 1893.

Mr. Mosedale's death occurred on July 5th. Aged 44.

JOHN WILLIAM FLITT, M.R.C.V.S., Watford.
Graduated, Lond. : April, 1869.

Mr. Flitt died on July 7. His age was 68.

The death is announced, as on May 28 last, at San
Francisco, of Mr. WILLIAM HENRY JONES, M.R.C.V.S.,
formerly of Chatham, Kent, from rheumatic complica-
tions. He graduated in London in 1875.

MR. P. PERKINS AND THE REGISTRATION COMMITTEE.

Sir,—I should like to point out to my friends in the
veterinary profession that the advertisement for which my
name has been removed from the Register, was put in once
only, four months before Lieut. Burton received his com-
mission and joined the Territorial Force, and that his
client, Mr. Hicks, whom I was accused of soliciting, sent
me a letter, which I forwarded to the Secretary, R.C.V.S.,
stating that he had employed me before Mr. Burton came
to Battle.

I should like also to thank the friends that have written
offering their help to me.—Yours truly,

P. PERKINS.

43 Havelock Road, Hastings.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.			Anthrxx		Foot-and-Mouth Disease.		Glanders† (including Farcy)		Parasitic Mange.		Sheep Scab.	Swine Fever.		
			Out-breaks	Ani- mals.	Out-breaks	Ani- mals.	Out-breaks	Ani- mals.	Out-breaks	Ani- mals.	Out-breaks	Out-breaks.	Slaugh- tered. *	
IRELAND. Week ended July 3			Outbreaks		...	4	4	14
Corresponding Week in {			1914	5	1	10
			1913	5	1	21
			1912	1	85	1	1	1	22
Total for 27 weeks, 1915			...	1	1	...	...	1	3	36	258	144	837
Corresponding period in {			1914 ...	1	1	75	955	...	...	49	352	117	653
			1913 ...	...	...	...	...	...	...	92	324	86	530
			1912 ...	2	2	1	85	...	...	46	249	138	1297

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, June 28, 1915

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection

Hunting Memorial Fund.

The *Second* Meeting of the General Committee of the Hunting Memorial Fund was held at the Royal College of Veterinary Surgeons, 10 Red Lion Square, W.C., on Tuesday, July 6th, 1915, at 7 p.m.

There were present:—Prof. Macqueen (in the Chair), Messrs. Fred Bullock (Secretary of the Royal College of Veterinary Surgeons), W. Roger Clarke, Joseph Emerton, H. A. MacCormack, John Wm. McIntosh, and Henry Gray (Hon. Secretary and Treasurer).

Letters of apology for non-attendance were received from Sir Stewart Stockman, Vet.-Capt. Graham Rees-Mogg (1st Life Guards), and Mr. George Thatcher (Solicitor, R.C.V.S.).

The minutes of the first meeting (Jan. 9, 1914), of the General Committee were read and confirmed.

The Hon. Sec. read his report on the progress of the W. Hunting Fund, and it was unanimously agreed that this report, together with the balance sheet, audited and found correct by Messrs. Hugh Begg and Wm. Woods, the appointed Auditors, be published in the veterinary press, and that the Fund be kept open *sine die*.

On the proposition of Mr. McIntosh, which was seconded by Mr. MacCormack, it was agreed that the recommendation of the Sub-committee as to the design and estimate, submitted by Mr. W. E. Buchanan, Monumental Mason, Wandsworth Common, S.W., of a Memorial for the late William Hunting be accepted, the lettering of same being left open for further consideration.

The stone is to be of a plain Cross design in all polished red Peterhead granite. It will represent a space of 6ft. 6in. wide by 7ft. long, with total height of Cross of about 8ft. The cost of Cross, bases and kerbs in best Peterhead granite, all polished, fixed on a hard Dunstrime stone landing (as foundation), 7ft. by 6ft. 6in. by 5in. thick with worked edges, will be £87 complete. The lettering to be in imperishable raised lead at 12s. per dozen letters extra.

It was proposed by Mr. MacCormack, and seconded by Mr. McIntosh, that all outstanding debts to date be paid forthwith. This was agreed to.

Mr. MacCormack proposed, and Mr. McIntosh seconded that the bankers holding the Fund be instructed to purchase £300 New War Loan, and hold the bonds to bearer on behalf of the Fund. This was agreed to *nem. con.*

As the meeting was not representative enough it was decided that the form the memorial should take be postponed to a future meeting of the General Committee, when it was hoped that a greater and a more representative attendance would be obtained.

Donations are requested from those who have not yet subscribed.

HENRY GRAY, Hon. Sec. and Treas.

Action by a Veterinary Surgeon.—Car accident at a level crossing.

In the Civil Court of the Northumberland Assizes, held at Newcastle on Tuesday, June 29, before Mr. Justice Ridley, Thomas Russell Jarvie, M.R.C.V.S., claimed £245 for damages against the Priestman Colliery Company for personal injuries and damage to a motor car at the level crossing near the New Inn, on the Blaydon highway, due to the alleged negligence of the defendant company's servants.

For the plaintiff Mr. A. W. Bairstow, K.C., who appeared with Mr. H. S. Mundahl, said on April 13 Mr. Jarvie, a veterinary surgeon with public appointments at Gateshead, was driving by motor car between Gateshead and Hexham, and on approaching the level crossing used by the defendant company to connect their brickyard with the North-Eastern Railway was run into by a locomotive engine.

Not seeing anyone with a flag, the usual indication to show that the line was being used for locomotive traffic, Mr. Jarvie took it that the way was clear, and proceeded to drive his car over the crossing. Just at the moment a lad rushed out with a flag, and while the motor car was crossing the line a locomotive crashed into it, breaking the car and inflicting injuries on plaintiff which threatened to be permanent and interfere with his professional career. Evidence was called in support of Mr. Bairstow's statement.

Mr. Waugh, K.C., said the whole case rested on the point as to whether the red flag to indicate that the crossing was closed was shown. He submitted it was, and called evidence to this effect; and then, addressing the jury, said the accident would not have happened if plaintiff had used ordinary and reasonable care. The defendants were not responsible for the risk the plaintiff took in trying to cross the railway after the flag had been shown.

The hearing of the case had not concluded when the Court rose.

The jury found defendants guilty of negligence, and also that the plaintiff was not guilty of contributory negligence. They awarded plaintiff £350.

"We consider this a very dangerous crossing," said the foreman of the jury, "in view of the increased motor traffic, and think more efficient means should be taken to safeguard the crossing in the interests of the public."

Judgment was entered for the plaintiff.

Mr. Waugh, K.C., applied for a stay of execution for 14 days, and, the money being paid into court, leave of appeal was granted.—*North Mail*.

Diseased Meat in Edinburgh.—Heavy Fine.

In Edinburgh Police Court, on 24th ulto., before Bailie Stark, evidence was heard in a case in which Robert Abbie, farmer, Annfield, Lower Largo, and Thomas Henderson, butcher, Hillhead Street, Lundin Links, Fife, were charged with having deposited five pieces of beef, consisting of a breast, spare rib, a roast, a flank, and a gigot, in the premises of the Edinburgh Meat Market at Fountainbridge for the purpose of sale, which were diseased, unsound, and unfit for human food (or otherwise). Henderson on 18th May sent by rail from Lundin Links, and consigned for sale for the food of man, to an Edinburgh meat market the said five articles which were diseased, whereby they are liable to a fine of £50 for each article, with expenses. Defendants pleaded not guilty.

Henry Milne, the manager of the Edinburgh Meat Market at Fountainbridge, said that on Wednesday, 19th May, two parcels of meat arrived from Lundin Links bearing the labels of Henderson the butcher. The five pieces of meat which were contained in the parcels were of the same carcass. The flank and roast had been stripped inside. The flesh was quite unfit for human food.

Arthur Gofton, F.R.C.V.S., Chief Veterinary Inspector in Edinburgh, said that he was summoned to the Meat Market in order to inspect meat which was lying there. He was accompanied by James Somerville, also a veterinary inspector. Five pieces of meat were shown them. The meat was flabby and soft, was not properly set, and was only moderately bled. The membranes had been removed, which had all traces of disease. The whole condition of the animal was such that it was unfit for consumption. If the animal had been killed as the result of an accident or been pole-axed the carcass would have set properly.

Mr. James Somerville, veterinary inspector, corroborated Mr. Gofton's evidence.

James Flaws, a constable in the Fife County Police, said that on Monday, the 17th, Mr. Abbie called at the station and reported that one of his cattle had died suddenly. He had come to the conclusion that it was anthrax. witness reported the matter to his superiors,

who told him to inform Mr. Syme, the veterinary inspector, who was then at Leven. Mr. Syme and witness proceeded to Mr. Abbie's farm and saw him personally. The dead animal was shown to them, lying with its throat cut, which Abbie said he had done after death. Mr. Syme then told him to skin the animal, as it was not fit for human food.

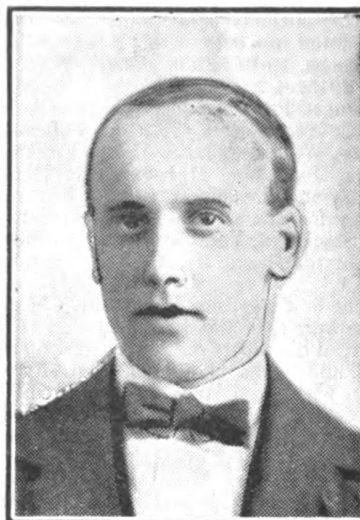
Mr. Syme said he had told Mr. Abbie that the skin was the value of the animal.

Mr. Abbie said that he was 63 years of age, and had occupied that farm for 33 years. The animal had been a perfectly healthy one, and was in splendid condition on the Sunday night. On the Monday morning the animal suddenly fell. It lay for about half an hour, and then got very lively again. The animal shortly afterwards took a second attack of the same kind, and he killed it. When the constable and Mr. Syme appeared after his visit to the police station regarding the death of the animal Mr. Syme examined its blood, but never inspected the carcase. Mr. Henderson, the butcher, afterwards cut the animal up, as he said that it appeared all right. Witness warned the butcher that he was not to consign the meat to anywhere if it was bad.

Thomas Henderson, the butcher, said that at the time when he was summoned the animal was perfectly healthy in condition. It was quite sound. He did not remove the membranes, but dressed the animal.

Bailie Stark said he found the charge proved in both cases. It was one of the worst cases which had come before the Edinburgh Police Court. "You have made yourself (said the magistrate) liable to a penalty of £250, but in the circumstances I will only impose a penalty of £75 on Mr. Abbie, and £50 on Mr. Henderson, with the alternative of 60 days' imprisonment." A month was allowed to pay.—*The Edinburgh Evening News*.

Mentioned in Despatches.



Amongst those mentioned in Gen. French's recent despatch for gallant and distinguished service, is Lieut. James M'L. Dawson, M.R.C.V.S., a graduate of the Glasgow Veterinary College, having qualified there in 1913. Lieut. Dawson, prior to the war was in practice in Aberdeenshire, answered his country's call at the outbreak

of hostilities, and was sent to France shortly after enlisting. He was home in the spring, and showed signs of the severe fighting which he had taken part in, by a large scar on his neck, caused by the bursting of a shell in his immediate neighbourhood. Lieut. Dawson is a native of Glasgow. He was an all-round athlete, having played in the 1st XI. of John Street Higher Grade School, and subsequently in the Glasgow High School side, and he won the school championship for running, and also his school "cap" for Rugby.—*Evening News*.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended July 10	6	11			2	2	31	61		96	317
Corresponding week in											
1914 ...	11	11					29	37		75	1006
1913 ...	10	13			3	10	41	74	1	65	939
1912 ...	5	5	8	35	2	3	30	54	1	72	1013
Total for 28 weeks, 1915 ...	374	423			29	46	‡472	‡1010	157	2535	11488
Corresponding period in											
1914 ...	461	491	11	74	59	156	1427	2516	147	2342	24644
1913 ...	333	361			93	264	1734	3569	122	1361	18550
1912 ...	513	573	45	252	92	191	2162	4770	164	1931	24580

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, July 13, 1915

† Counties affected, animals attacked: Kent 1, London 1,

‡ Figures for fifteen weeks only.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
IRELAND.											
Week ended July 10	...	...	...	...	...	...	4	2	2	11	
Corresponding Week in											
1914 ...	...	...	...	...	...	...	3	7	9	18	
1913 ...	...	...	...	...	...	...	...	9	4	20	
1912 ...	...	...	15	46	...	...	...	4	7	16	
Total for 28 weeks, 1915 ...	1	1	...	...	1	3	40	260	146	848	
Corresponding period in											
1914 ...	1	1	75	955	...	...	52	359	126	671	
1913 ...	...	...	...	...	...	...	92	333	90	550	
1912 ...	2	2	16	131	...	...	46	262	145	1313	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, July 12, 1915.

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

THE VETERINARY RECORD

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FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1411.

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VOL. XXVIII.

THE COLLEGE FINANCES.

As reported in last week's issue, the Treasurer and Trustees of the R.C.V.S. are taking some important steps to improve the College finances. Briefly, the plan is to borrow £8200 in order to buy sufficient new War Loan Stock to enable the existing College Consols to be converted into War Loan, and then to repay the debt of £8200 by a speedy transfer of Stock. The net result will be that our present Consols will remain to us converted into new War Loan.

We have only one comment to make—that is, that Treasurer, Trustees, and Council deserve credit for their promptitude in seizing an exceptional opportunity. When all is done, the conversion will leave us in a less unsatisfactory position than we were in before. But, at the same time, too much must not be expected from it. Our income from investments will be rather larger than before; but our total income will still be far below our living requirements. The real advantage will be that the stock we continue to hold will have a higher market value than Consols are likely ever to approach again; and thus the College will be able to stave off bankruptcy longer than could otherwise be done. We shall have a slightly larger income, and distinctly more capital to draw upon, than before. It is the best thing that could have been done in the circumstances; but it amounts to no more than making the best of a very bad position.

THE CRYPTORCHID OPERATION.

Prof. Wooldridge has done some service to country members by his lucid exposition of this operation, which appears in the proceedings of the Southern Counties V.S. on another page. Every country practitioner now and then gets opportunities of performing the operation; and there is no reason why each should not undertake it himself. In most cases, the operation is not nearly so difficult as some who have never tried it suppose; but no one can say whether a case is going to be easy or otherwise before operating, and no one, therefore, should attempt to operate without having first thought out all the possibilities. With such preliminary thought—which the paper under notice would assist—no member need fear to add the operation to his repertoire.

Incidentally we may call attention to Prof. Wooldridge's favourite method of fixing the horse. It is one which has been known to some practitioners for a long time, but is perhaps not yet so widely known as it should be. It has the advantage of extreme simplicity, and all country practitioners will appreciate that.

INJURY TO A HORSE'S TONGUE,

Ulbricht, of Grossenhain, has recorded the following unusual case. A horse, while endeavouring to eat oats from a neighbouring horse's manger, had his tongue torn off to the base of the frænum linguae by the second horse. The torn-off piece was about 6 1/5 in. long; different nerves and vessels were hanging from its basal extremity; while the region of the point of the tongue showed several biting wounds.

The bleeding was very insignificant, and ceased after some time without any treatment having been adopted. The pain did not seem to be excessive; for shortly after the accident the horse endeavoured to eat hay. He grasped the hay with his lips and incisor teeth, but was not able to masticate or to swallow it; and, similarly, it was impossible for him to drink water.

The medicinal treatment was simple, consisting of washing out the mouth several times daily with clean water to which some alum had been added. The most important part of the treatment, however, was artificial feeding; as at first it was impossible for the horse to feed unassisted.

Nutrient clysters, consisting of a gruel of meal, salt, and water, were administered. In addition to this, feeding through a mouth-tube was adopted in the following manner. The head was elevated to a fairly horizontal position, a rubber tube was pushed through one corner of the mouth to about the middle of the molars, and water and meal-gruel alternately were slowly introduced through this. The horse very quickly learned to close his lips, suck through the tube and swallow; so that only small quantities escaped again through the sides of the mouth.

In order that the horse might practise feeding and drinking unassisted, a pail of water was always kept hung before him, and food was also given him in a shallow manger. The horse was very quickly able to get food into his mouth and masticate a little, but was not yet able to swallow. Now and then, by dipping the mouth into water as flatly as possible, so that the corners of the mouth were immersed while the openings of the nostril remained free, he succeeded in sucking in fluid, and then swallowing it by suddenly jerking up the head. The wound of the tongue was healing visibly; and the stump could now be drawn about two inches further forward than at first.

After five days, the horse could already partially masticate oats, although many of them fell out of his mouth while doing so. After another three days he succeeded in taking all the food and water that was given him without assistance, and did so

in almost the same time as a healthy horse. Only very few undigested oat-grains could be found in the faeces. The stump of the tongue could now be drawn out almost beyond the molars to the beginning of the interdental rim. After about three weeks the wound had completely healed, with the formation of a small pointed apex directed towards the incisor teeth.—(*Berliner Tier. Woch.*)

TWO CASES OF ABSENCE OF A KIDNEY.

Becker, of Guhrau, and Simmat, of Eisleben, have each recorded a post-mortem observation of absence of a kidney. Becker's case was a horse, and Simmat's an old cow. In both cases the left kidney was absent, and the right one was double its normal size. In the horse, no indication of a left kidney was present; while in the cow—a well-nourished animal—an empty sac about the size of an apple was found embedded in the fatty tissue. In the cow, moreover, both supra-renal bodies were present, and were normal in size.—(*Berliner Tier. Woch.*)

STUDIES OF THE MYOCARDITIS FOUND IN THE MALIGNANT FORM OF FOOT-AND-MOUTH DISEASE.

Prof. E. Joest, during a recent epidemic of foot-and-mouth disease, examined the hearts of twelve cattle which had died from the malignant form of the affection. Six of the animals were adult, and six were calves.

Macroscopically, it was found that the heart was enlarged in all its parts, and appeared very flaccid. In most cases the apex of the heart was rounded and the base broadened. The myocardium (especially that of the left ventricle) contained multiple whitish-grey centres ranging from millet seed to pea size, the consistence of which was softer than that of the remaining myocardial tissue. The epicardium, endocardium, and valvular apparatus showed no noteworthy lesions.

Microscopically, it was found that in these centres, between the bundles of muscular fibres and within them, the interstitial tissue was luxuriant and was metamorphosed into a kind of granulation tissue. This granulation tissue pressed in between the muscle fibres, pressed them one upon another, or formed small centres which interrupted the continuity of some muscle fibres. In the larger centres, whole bundles of muscle fibres were completely replaced by the granulation tissue, or only isolated muscle fibres or broken pieces of such remained. As a rule, these remnants of muscle fibres showed more or less marked fatty degeneration.

In the adult cattle, the process was essentially one of interstitial myocarditis.

In the calves, in addition to interstitial lesions, parenchymatous alterations were prominent. Joest regarded this multiple myocarditis as being the cause of acute cardiac insufficiency in the cases he examined.—(*Berliner Tier Woch.*)

W. R. C.

SOUTHERN COUNTIES VETERINARY SOCIETY [NATIONAL V.M.A.—SOUTHERN BRANCH].

A meeting was held on Wednesday, June 30th, at 1 Stafford Road, Southsea, the residence of the Hon. Secretary, who not only placed the necessary accommodation at the disposal of the Society, but also afterwards kindly entertained the visiting members to tea. The President, Mr. G. H. Livesey, of Hove, was in the Chair, and the others who signed the attendance book in addition to the Hon. Secretary, were Mr. J. T. Angwin, Arundel; Prof. G. H. Wooldridge and Mr. H. A. MacCormack, London; and Mr. C. Pack, Lymington.

The minutes of the previous meeting, as published in *The Veterinary Record* were taken as read and confirmed, on the proposition of Mr. MacCormack, seconded by Mr. Pack.

The Hon. Sec. announced that letters or telegrams of regret at inability to attend had been received from Prof. Hobday (who is in France), Capt. H. Leeney, and Messrs. E. Whitley Baker, W. Caudwell, H. H. Jeffries, J. Cecil Munby, C. Sheather, S. H. Slocock, R. A. Thrale, C. H. Spurgeon, and A. C. Wild.

A letter was read from the Secretary of the Royal College of Veterinary Surgeons conveying the thanks of the Council of the College for the patriotic way in which the Society had endeavoured to give effect to the suggestions contained in the circular issued by the College as to joining the Army Veterinary Corps.

The Hon. Sec. mentioned, in connection with this matter, and his own experience which he related at the last meeting, that Mr. H. Haywood Jeffries, of Guildford, had written him that he was veterinary officer in charge of the Central Remount Depot at Aldershot from August 4th to February 14th, when civilian officers were replaced by officers of the Army Veterinary Corps; and it was resolved that the name of Mr. Jeffries should be added to the list of members of the Society who had served or were serving their country in the present crisis.

A circular letter from the Eastern Counties Veterinary Medical Society was submitted and an enclosed copy of the resolution which had been passed by that Society:—

“That in view of the great scarcity of Veterinary Surgeons, the time has arrived to encourage the graduation of practical men, and that this can only be obtained by the compulsory pupilage of students for at least twelve months with a qualified veterinary surgeon prior to being admitted as students to any of the Veterinary Colleges.”

Mr. ANGWIN was cordially in agreement with the principle contained in this resolution. A young man could have no better experience of what would be expected of him than the practical acquaintance of the work of a veterinary surgeon which he got as a pupil with a fully qualified man. He was articled himself, immediately on leaving school, to a practical veterinary surgeon for two years. He worked hard during that time, even doing his share at the forge, but what he learnt during those two years he had never forgotten, and his experience had frequently stood him in good stead since. He was very much in favour of this compulsory pupilage, as he thought it was the best possible thing for a young fellow to begin his training under a practical man.

The PRESIDENT: I quite agree; but is it a subject we can deal with entirely to-day?

Mr. ANGWIN: I don't think we can, especially with such a small attendance as we have this afternoon.

Prof. WOOLDRIDGE quite agreed with the principle, but he pointed out that the whole thing would bristle with difficulties when they came to put it into effect. For one thing, they would have to compile a register of veterinary surgeons of ability and with a sufficiently

extensive practice to whom young men could be sent with confidence; and another great stumbling block would be what was the best time for the pupil to serve. Some people would say "before going to College," while others would no doubt hold the view that it should be at some period during the College course, when the pupil would be in a better position to absorb the knowledge. A further difficulty would be that if they made this pupilage compulsory they would be increasing the four years curriculum which they now had, to five or six years, and it was a serious question as to what effect that would have on the flow of candidates. He himself was articled to a well known veterinary surgeon for four years—two years before going to College, and two years during his College term—and, like Mr. Angwin, he had never regretted it. In fact, he thought that a good deal of his present success had been directly attributable to the ground training he got in the practical side of the work then.

He suggested that they acknowledge the receipt of the resolution, and state that it was favourably received; and it might go down on the agenda for discussion at the next meeting.

Mr. MACCORMACK thought this would be an excellent course to adopt. He would be pleased to propose it.

The PRESIDENT asked how the idea was likely to affect the Colleges.

Prof. WOOLDRIDGE replied that that was one of the difficulties he had mentioned. Many people could afford to give their sons four years who would be unable to run to five or six, and if they had to start with this additional two years pupilage they would probably never send their sons at all. He did not think, however, it was the interests of the Colleges they had to consider so much as the general welfare of the profession.

The proposition to inform the Eastern Counties Society that the principle of their resolution had been favourably received and to put the matter on the agenda for the next meeting was then seconded by Mr. Angwin and agreed to.

On the proposition of Mr. Angwin, seconded by Mr. Archer, it was decided that the next meeting of the Society should be held, if possible, at Brighton, at the end of September.

The next item on the agenda was a paper by Prof. G. H. Wooldridge, on the "Castration of Rigs," but it was decided to first invite the contribution of

SPECIMENS AND CASES OF INTEREST.

Prof. WOOLDRIDGE exhibited two testicles which he had removed from rigs only the previous week. The first of these, he explained, was abdominal, and was discovered floating about in the pelvis. It was malformed, having no epididymis, but there was a very long cord, and the external surface of the testis was affected with peritonitis. It was very soft and flabby, and on cutting into it he found a chocolate coloured fluid suggestive of abscess formation. The right testicle of the animal, which was a yearling, was practically normal. One interesting point which this case opened out, Prof. Wooldridge observed, was, What would have happened if the owner had taken the advice of some of his friends and left the animal until it was two or three years old? This course was frequently recommended in order that the missing testicle might have an opportunity of coming down, but in this case he found what was virtually an abscess, and no proper testicle.

Mr. PACK: And supposing it had remained there and no air had gained access to it it might have withered up.

Prof. WOOLDRIDGE: It might.

Mr. PACK: In that case it might just as well have been left there, and you would have been saved the trouble of taking it out.

Prof. WOOLDRIDGE: Quite so; but on the other hand it might have increased in size and caused more trouble.

As I say, it is most interesting to speculate as to what might have happened.

The PRESIDENT: Why was the animal brought to you to be operated upon?

Prof. WOOLDRIDGE: It was not intended to keep it as an entire, and it was beginning to become troublesome. It was intended to have it castrated eventually, and it was a question as to whether it should have only the scrotal testicle removed, or both.

The PRESIDENT: In a case like this, when you have removed the one, why remove the other?

Prof. WOOLDRIDGE: Because in a good many cases if the other remains the horse frequently continues troublesome, especially in the presence of mares.

Mr. ANGWIN said that he had a case the other day in which he removed one scrotal testicle which weighed eight ounces and a little more, but there were no signs of the other one, and there he left it. He was going to see what happened.

The PRESIDENT: Is it your experience, Professor Wooldridge, that abdominal testicles are a cause of trouble?

Prof. WOOLDRIDGE replied in the affirmative. He did not say it was necessary for a testicle to be fertile for an animal to be troublesome, but he had no doubt that in addition to the secretion of spermatozoa there was an internal secretion associated with the testicle, and that internal secretion, he believed, had a great deal to do with the general vitality of the animal.

The second specimen he wished to draw their attention to was a more common example of the testicle that was found sometimes in the inguinal canal and sometimes in the abdomen. The majority of these were sterile, but not all. There were cases on record, indeed, of animals with two abdominal testicles that have been consistently fertile.

Mr. ANGWIN asked for the opinion of members on a point connected with glanders. In the case of a horse that had been bred and always kept on the countryside; where they got a local reaction to mallein but there was no temperature reaction whatever, would they be right in condemning that animal as a suspected case of glanders.

Prof. WOOLDRIDGE said that he would probably do so in a London stud; but the whole thing depended upon the actual character of the local swelling. The fact that they got a large local swelling did not of itself constitute a reaction to glanders, but if the character of that swelling was consistent with glanders, even if there was no temperature reaction, he should certainly regard the animal as distinctly suspicious, and should re-test the case in a month.

Mr. ANGWIN explained that he asked this question because he had a case brought to his notice recently in which a horse had been condemned as suspicious, but in which, on making a post-mortem, he could not find any signs whatever of glanders.

Prof. WOOLDRIDGE: If I found a horse in that condition in a London stud I should condemn it at once, but if the animal had come direct from the countryside I should re-test it in a month.

Mr. ANGWIN also asked for advice respecting a little Pekingese dog which, he said, had a huge swelling round the rectum.

The PRESIDENT suggested that it was probably a case of adenoma.

CASTRATION OF RIGS.

By PROFESSOR G. H. WOOLDRIDGE.

When pressed by your President to read a paper at this meeting, I was doubtful as to what subject would be most interesting. As I had been recently operating on rigs, this subject suggested itself. At the present high value of horses it behoves us to make the best of

them, and wherever possible to improve their working value, as by castrating intractable rigs and spaying vicious mares.

The term "Rig" is applied to a male of the horse tribe having attained the age of six months or over in which either one or both testicles have failed to descend into the scrotum. The term "cryptorchid" is applied when neither testicle has descended, and "monorchid" when one testicle only has descended. If the defaulting testicle has reached the inguinal canal, the animal is often called an "inguinal rig"; if it is retained within the abdomen, he is called an "abdominal rig."

In the fetus the testicles are developed from the genital ridge at the roof of the abdomen behind the kidneys. In normal cases each one passes downwards towards the internal abdominal ring of the same side, and then through the inguinal canal into the scrotum. The testicles are either in this position at birth or, as a rule, within six months after birth. Occasionally, as indicated above, either one or both testicles fail to reach this situation. Sometimes it is only a question of delay, possibly of one or two years, while in other cases the belated testicles would certainly never reach their proper situation.

The reason for the abnormality is not always easy to assign, for occasionally the testicle is apparently normal in every other respect, and may even be functional. In the majority of cases structural variations are met with, such as cysts, tumours, teratomata; or more frequently the gland is very small, either from arrested development or atrophy. Sometimes a short vas deferens or an unduly narrow internal abdominal ring or inguinal canal may cause the retention. In one case which I have the opportunity of showing to you to-day, there has evidently been an orchitis and local peritonitis. Heredity appears to play its part also, as rigs occur fairly frequently amongst the progeny of certain sires and also of certain mares.

Fertility. A cryptorchid is usually sterile, but not invariably so. A monorchid is less frequently sterile, for there is a fair prospect of the one descended testicle being quite functional, even if the detained one is sterile. In my experience the scrotal testicle of a monorchid is generally larger than normal. I have examined preparations from a number of inguinal and abdominal testicles, and although in most of them I failed to discover spermatozoa, yet in a fair proportion spermatozoa were easily demonstrated. In the latter cases it is probable that the abnormal position was only due to anatomical causes.

Age and time for Operation. As I have already noted, detained testicles will occasionally appear in the scrotum at two or three years old, and so it is sometimes advised that operation should be delayed until that age and thus avoid extra risks. This procedure is often troublesome, owing to the difficulty of controlling such colts and the impossibility of turning them out with other horses, particularly of the opposite sex. It is, therefore, often found more practicable to have them operated upon as yearlings, or at the latest as two-year-olds, the inconveniences outweighing possible advantages of delay.

As for the time of the year, I do not think it matters much, although I prefer to avoid either extreme of temperature.

The preparation of the patient. This consists of getting him into good robust condition, but not too spirited and not fat. His bowels should be slightly relaxed with green food or mash a day or two before the operation, and he should be given only a very small feed of oats and a small amount of water on the day of operation.

The securing of the patient is of the greatest importance, and should be such as to allow of easy access to the inguinal region, and also to procure as great a

degree as possible of relaxation of the structures in that region. If the animal is one that can be easily handled I prefer to cast with hobbles in an open field, and to complete the fixing of the colt after having chloroformed him whilst lying on his side. If the colt has not been handled then he must be cast with sidelines, but not too tightly "trussed up."

I prefer the hobbles because I consider there is less danger of a fractured limb in the excitant stages of chloroform, and the patient is also in a better position to receive the anaesthetic.

While the chloroform is being administered, the penis and sheath should be washed and his feet should be picked out and cleaned, so that no dirt shall fall off them into the operation area when he is placed on his back. Two stout pieces of webbing or rope should be attached, one to each shank just below the hock, then passed under his back in opposite directions. When under chloroform the colt should be rolled on to his back and supported there by attendants until the fixation is completed. This consists of letting out the chain of the hobbles several links, or slightly relaxing the sidelines, and then by exerting strong traction simultaneously on the two webbings under the horse's back, his hocks become flexed and widely spread out. Each webbing is then tied securely to the opposite shank to that to which it is already secured. Thus the spreading of the hocks exposes the inguinal regions and the flexion relaxes the areas. If sidelines have been used and not slackened, the hind legs are drawn tightly forward and the inguinal region is difficult of access. The colt can now be propped up by bundles of straw, or sacks filled with straw and supported by attendants. The head should be resting on the poll, a strong man kneeling in front and folding both arms round the jawl. Other operators have other methods of securing for which they claim advantages, some rather complicated though very effective. I have seen none more effective or so simple as the method I have described, unless possibly that plan I saw adopted by Prof. Cadiot, of casting by hobbles, removing the leg of the side to be operated upon from the hobble and securing it fully extended backwards to a fixed post behind. However, I prefer my own method.

Having secured the patient, the feet and hocks should be wrapped round with towels previously dipped in a disinfectant and tightly wrung out, to reduce the chances of dirt falling from them into the operation area. The rectum should be emptied by an assistant or attendant in order to facilitate the identification of the testicle should it be abdominal in situation. An examination per rectum will also assist in some cases to indicate the position of the testicle, but the operator is not advised to do this at the time of operation, on account of soiling his hand and arm, and the difficulty of immediately cleansing it as thoroughly as is necessary.

Instruments. These should have been previously sterilized by boiling, and laid in a tray containing either 1 : 40 carbolic acid solution, or 1 : 100 lysol solution. The necessary instruments consist of a sharp scalpel, dressing forceps, two or three pairs of artery forceps, a trochar and cannula, in case the testicle is cystic and requires puncturing, an ecraseur and two chains (for fear one should break), some strong silk and a corresponding needle. Cotton wool should be provided for sponging, and a clean vessel for an antiseptic solution for that purpose, such as creolin.

The Incision. In cases where one testicle has been removed some time previously, it is necessary to determine on which side the retained testicle is. That may possibly be known to the owner, or it may have been ascertained by the previous rectal examination. Often it has to be determined by the condition of the operation area and the presence or absence of a scar indicating where the previous operation has been performed. But

that is not always sufficient, for, as in the last case I operated upon, there may be a scar on each side. Then one may be assisted by the presence of a slight depression on that side from which a scrotal testicle was removed, the depression when present being due to the adhesion of the cord to the inner surface of the scrotum. Having determined the side for operation, an incision three to four inches long should be made through the skin, either directly over the external abdominal ring or a little nearer the median line. The external abdominal ring can be felt with the flexed limb, by pressing the fingers along the line of junction of the thigh and abdominal wall. It is the slit-like external opening of the inguinal canal, about three inches long, running obliquely outwards and forwards. Its inner angle is three or four inches from the median line, and its anterior wall consists of the muscular portion of the internal oblique abdominal muscle and supported somewhat by the thin tendon of the external oblique abdominal muscle. The posterior wall consists of Poupart's ligament, which is the reflected portion of the latter tendon, and is continuous with the fascia of the thigh.

Having made the cutaneous incision the knife is laid aside, and in my case is not again required. The loose connective tissue for about two to three inches in depth covering the external ring is separated by the fingers, and in doing this one frequently exposes one or two fairly large veins. If these should interfere with the free access to the ring, I apply two ligatures and cut between them. If they have been inadvertently cut in making the cutaneous incision, they should be picked up by artery forceps and tied. The external pudic artery accompanied by inguinal nerves and lymphatic vessels lie in the inner angle of the ring, passing to or from the inguinal canal. The operator, having taken up his position behind the patient, uses the hand nearest the incision, and may now examine the canal which is a passage three or four inches long curved somewhat forwards, and becoming narrow as it reaches the inner opening—the internal abdominal ring.

In a so-called inguinal rig, the defaulting testicle may be found here, and can be drawn out and removed by the *ecraseur*. In other cases a loop of the spermatic cord may be detected, and by taking hold of it with the thumb and fingers and carefully exerting traction, the testicle may be drawn out and detached.

In other cases, however, the internal ring may be reached without cord or testis being found, and it then becomes necessary to penetrate the abdominal cavity. To do this, the fingers are pressed in a little further, and the peritoneum covering the internal ring is punctured and slightly torn to admit several fingers, and the immediate vicinity explored, for often the testicle is lying here, slightly to one side or the other, at the entrance to the pelvis. If it is not found here, the whole hand must be passed on into the abdomen. Sometimes without any particular volition on the part of the operator the testicle floats into his hand, and is easily withdrawn unless the *vas deferens* is abnormally short. In the latter case the *ecraseur* must be passed down the canal to the testicle for its excision.

In many cases, however, one is not so fortunate, and a search must be made for the gland which is abnormal in position and may be almost anywhere within the abdomen. Haphazard search in such a case is likely to be a prolonged one. This can generally be avoided by systematically seeking the *vas deferens* in the fold between the rectum and neck of the bladder on its way to the seminal vesicle. If the *vas* is picked up and its course followed, it must of necessity lead to the missing testicle. But the great variations in the testes even then may make one hesitate as to its identity, and in one of my cases the gland was as small as a hazel nut and quite soft, and several times slipped through my fingers before I could realise that it was the testicle.

If the testicle is cystic, and too large to be drawn through the ring and canal, it must first be punctured with the trochar and cannula and then removed. One must also be sure that it is a testicle, and not epididymis only. In one case (now exhibited) I could only find the body of the testis and no epididymis, but as the *vas* appeared to be abnormally long, I consider it probable that there may have been no epididymis, which, after all, only consists of numerous coils of the *vas*.

If the patient is a double rig, the second testicle may be searched for, per the same canal, but if it is not readily found it is unwise to persist for long, as it causes a great dilatation of the canal and internal ring and thus predisposes to hernia subsequently. In fact, such a case constitutes my only fatal case. Therefore, unless readily found, it is a matter for choice as to whether you should proceed at once to operate on the other side, or postpone it to a future date.

In closing the wound it is only necessary, in the majority of cases, to insert about three strong sutures through the skin. But if the operation has been prolonged and the canal greatly dilated, one may first insert two or three sutures across the external abdominal ring. Some operators insert a plug in the canal to prevent the prolapse of the bowel, using either sterile wool, or a small sterilized towel. I consider that plugs only serve to keep the canal open. If nothing is inserted, the weight of the bowels against the abdominal wall forming the anterior wall of the canal serves to automatically close it in a valve-like manner.

The chloroform muzzle should have been removed as soon as the testicle was excised, so as to expedite recovery from anaesthesia. After insertion of the sutures, the back ropes should be removed, thereby relaxing the limbs and closing the inguinal canal. The patient is then best left for a few minutes to recover from the chloroform, so that he may be able to rise without a struggle, and, on taking off the ropes or hobbles, he should be left lying on the side on which he has been operated upon in case of a single operation. By this simple precaution the thigh presses against the inguinal canal on rising and reduces the chances of prolapse.

Instead of operating through the inguinal canal in cases where the track has been examined in vain, some operators prefer to make an incision through the abdominal wall an inch or two in front of the external abdominal ring and parallel to it, and a little further from the middle line. The incision is first small, and may be enlarged if necessary to admit the hand. Search for the abdominal testicle is then conducted as in the previous method, and subsequently the muscle must be sutured with strong silk and then the skin. I do not see any special advantage in this method, but I consider that the danger of hernia is rather greater.

When the horse has risen, he should be led quietly to a clean and airy loose box with a good straw bedding, and after a while given a small drink of tepid water and a small mash. His food for several days should be slightly relaxing in nature, so that there shall be no straining in defecation. He should also be exercised once or twice daily for an hour, and the inguinal area swabbed with creolin or carbolic solutions. The sutures should be removed on the second or third day, and attendants should not be permitted to stick their fingers into the wound.

Possible ill results include hernia of the bowel, hæmorrhage, peritonitis, and any wound infection.

The following list of my last dozen consecutive operations may be of interest:—

Case I. (With Mr. A.) A three-year-old thoroughbred, monorchid, the left testicle being in the scrotum, weighed 10½ ozs., and contained spermatozoa; the right testicle was at the top of the inguinal canal, weighed 2½ ozs., spermatozoa not demonstrable.

Case II. (With Mr. O.) A six-year-old Shire horse. One scrotal testicle had been previously removed. The detained one was in the inguinal canal, and spermatozoa were not demonstrable.

Case III. (With Mr. R.) A three-year-old Shire horse. Single rig. The detained testicle was abdominal, weighed $5\frac{1}{2}$ ozs., and was apparently sterile, no spermatozoa being found. (See *Case V.*)

Case IV. (With Mr. D.) A three-year-old, hunter type. Single rig. The left testis was abdominal and situated in the pelvis. It weighed 4 oz. and 2 drachms, and no spermatozoa were found.

Case V. (With Mr. R.) A three-year-old Shire monorchid. The scrotal testicle weighed 13 oz., and contained spermatozoa; the other testicle was pelvic in situation, weighed 2 oz., and was apparently sterile.

[NOTE. This horse was by the same sire as that of *Case III*, and in the same season this sire was reported to have left 15 rigs in the same district. So far as Mr. R. knew, the sire possessed two scrotal testicles.]

Case VI. (With Mr. S.) A three-year-old horse, hunter type, monorchid. The missing testicle (near side) was pelvic in situation, weighed $3\frac{1}{2}$ oz., and contained spermatozoa, and may, therefore, have been fertile. The scrotal testicle was enormous in size, weighing 20 $\frac{1}{2}$ oz., and possessing spermatozoa. The spermatic cord of this testicle contained very bad varicose veins, and as bleeding was difficult to check, I applied a strong ligature and *transfixed* it. The ligature consequently was not thrown off, the wound was slow in healing, and in a month a fairly large inflammatory enlargement (a scirrhus cord) had developed. I cast the horse and removed the enlargement, which weighed 4 oz., and found the ligature in the centre. Recovery followed. The lesson to be drawn from this is—never *transfix* a ligature on a spermatic cord!

Case VII. (With Mr. A.) A small grey thoroughbred three-year-old. Cryptorchid. Both testicles were abdominal. The left one was only found after a long search, owing to its minute size. Both testicles were removed through the left canal. The left testicle weighed $\frac{1}{2}$ oz.; the right one weighed $2\frac{1}{2}$ oz., and contained a dermoid cyst. Spermatozoa were not found in either. In this case the small intestines became herniated during the next night, and were dragging on the floor and badly damaged before being seen. I was called in the next morning, but considering the case hopeless, I pithed him.

Case VIII. (With Mr. K.) A four-year-old Shire horse. Single rig. The near testicle was removed from the abdomen, and contained no spermatozoa.

Case IX. (With Mr. O.) A two-year-old pony, 12 hands. Single rig. The off testicle was recovered from the inguinal canal, weighed slightly over half-an-ounce (17 grammes), and contained no discoverable spermatozoa.

Case X. (With Mr. O.) A nag horse, single rig. The left testicle was discovered high up the inguinal canal, and was apparently sterile.

Case XI. (With Mr. G.) Yearling cart-horse; monorchid. The right testicle was scrotal and weighed 8 oz. It contained spermatozoa. The left testicle was discovered in the pelvis and was malformed, having no epididymis but a very long cord. Its external surface was affected with peritonitis. It was soft and flabby, and on cutting into it was seen to contain a reddish-brown fluid suggestive of abscess formation. Its weight was $2\frac{1}{2}$ ozs.

Case XII. (With Mr. G.) A grey two-year-old cart horse; single rig. On examining the inguinal regions after casting, scars could be detected on both sides, that on the right side being a deeper and thicker cicatrix. The left side was therefore operated upon. A very small loop of cord could be felt just at the internal abdominal ring, and by gentle traction on it, the abdomi-

nally situated testicle was drawn into the canal together with the peritoneal cul-de-sac. It was smaller than normal, weighing $2\frac{1}{2}$ oz., and contained no spermatozoa.

The PRESIDENT, in commenting on the paper, remarked that it had been a most interesting one. Personally he had practically no experience of this class of work, although he had watched a good many operations. There was one question he would like to put to Professor Wooldridge, and that was whether in horses that might be called potential rigs it was possible for the testicle to have been seen in the scrotum and for the animal to have drawn it up close to the ring again. Did these horses give trouble, and had he come across any case where an animal had been able to draw an insufficiently developed testicle inside the ring with the result that when one examined it it showed no testicle at all? He had seen this in the case of the dog.

Mr. ARCHER also asked whether these testicles were found more on one side than the other?

Mr. PACK: I think there is no doubt the left is the worst.

Mr. ANGWIN remarked that Professor Wooldridge had not said anything about chloroforming in a standing position, and he presumed from that that he did not approve of it. They would remember their late President, Mr. Roberts, of Tunbridge Wells, was very strong on this. He mentioned this because he had a couple of thoroughbreds to castrate the following week which nobody could get near, and how they were going to do them he did not know. It had occurred to him that when they were going to make an examination per rectum, would it not be a good thing to give a cold water enema and walk the horse about a bit first? Another question he would like to put was, how Professor Wooldridge would control the hæmorrhage that might occur after he had used the *écraseur*?

Mr. PACK remarked that with reference to the casting by side lines the great thing was to get the legs well back on to the ribs. He also gathered from Professor Wooldridge's remarks that the testicle was occasionally present in the inguinal canal although it may not have come down into the scrotum.

Prof. WOOLDRIDGE: Yes, but I have heard of instances in which they have been unable to find it. Proceeding to reply to the discussion, Prof. Wooldridge remarked, with regard to the President's question, that he was sure that was the case, and that often a horse had the power of contracting its cremaster muscle and so drawing a small testicle from the scrotum right up into the ring or canal, but in such a case he should have no hesitation, if he did not find it in the scrotum, of operating in the ordinary way, and removing it. With regard to Mr. Archer's question, he had not got enough statistics to determine the point. He had just referred to the dozen cases he had mentioned that afternoon, and he found that only in nine of these had he indicated clearly which side was affected. In six of these it was the left side, in two it was the right, and in the other both sides were affected. As to chloroforming animals, he was not an advocate of doing it while the animal was in a standing position, although he quite appreciated the advantage of it in certain cases, and in the two cases Mr. Angwin had in view he should not hesitate to chloroform the horses standing. As to the wisdom of giving an enema, he was quite sure it would be very useful in many cases, but there were some colts who would not stand for it. With regard to the controlling of the bleeding, he quite saw that a difficulty might arise if one had a short cord, but in the majority of cases they could see the cord and provide against it. In cases where he had had any trouble he had taken up the cord and put on a single thin ligature.

Mr. ANGWIN: And would you leave it sufficiently long to pull it off later, or leave it as a buried ligature?

Prof. WOOLDRIDGE: You may either cut it very short and leave it to be buried, or long enough to be drawn out; but, whatever you do, don't transfix it if you are going to draw it out later. Continuing, Prof. Wooldridge had never used clams in the case of rigs, although he generally took them with him, as there might be occasions when they would be an advantage. He also remarked that a great deal depended on the way one used the *écraseur*. It was better to use the blunt edge of the chain, or the side with the bevel.

On the proposition of Mr. Angwin, seconded by Mr. MacCormack, a hearty vote of thanks was accorded Prof. Wooldridge for his interesting paper, and on the suggestion of the President, seconded by Mr. Angwin, a similar recognition was also made of the kindness of Mr. and Mrs. Archer in placing the necessary accommodation at their disposal for the meeting, and for their hospitality in providing tea.

A. H. ARCHER, Hon. Secretary.

GLASGOW VETERINARY COLLEGE.

PRIZE LIST.

The examinations conducted by the Royal College of Veterinary Surgeons took place on 5th July (written), 7th and 8th (oral and practical), before the Board of Examiners. There were present as ex-officio members:—Principal M'Call and his staff; Mr. J. Clarkson, M.R.C.V.S., Garforth, near Leeds, representing the Royal College of Veterinary Surgeons; and Major Baird, M.R.C.V.S., local Secretary to the Board of Examiners. The following students passed the respective examinations, viz.:—"A" or first professional—Robert Scoular, Cambuslang; William G. Jones, Newry; Thomas H. Michie, Alva; Andrew Alexander, Kilmarnock; James H. Motion, Saltcoats. Second class honours—John D. Ferguson, Corroir; Brimley Sayer, Newport, Mon. "B" or second professional—A. H. Roemmele, Glasgow; Robert R. Moodie, Rothesay; George L. Bradley, Glasgow; David G. Wishart, Kilmarnock. "C" or third professional—John S. Keane, Glasgow.

The following medals, granted by the Highland and Agricultural Society, Principal M'Call, and the late Professor Allen Thompson, and certificates of merit have been awarded as follows:—

Chemistry—James H. Motion, medallist and first-class certificate; Thomas H. Michie, first-class certificate; William G. Jones, second-class certificate.

Junior Anatomy—Thomas H. Michie, medallist and first-class certificate; James H. Motion and Joseph Turner, first-class certificates; Robert Scoular and William G. Jones, second-class certificates.

Biology—James H. Motion, medallist and first-class certificate; Thomas H. Michie and Brimley Sayer, first-class certificates; William G. Jones, second-class certificate.

Senior Anatomy—Robert R. Moodie, medallist and first-class certificate; George L. Bradley and David Wishart, first-class certificates; George Corson, second-class certificate.

Stable Management—David G. Wishart, medallist and first-class certificate.

Physiology and Histology—David G. Wishart, medallist and first-class certificate; George L. Bradley, first-class certificate; Robert R. Moodie, second-class certificate.

Pathology and Bacteriology—John S. Keene, medallist and first-class certificate; Archie L. Robertson, first-class certificate; Charles M'Pherson, second-class certificate.

Materia Medica and Therapeutics—John S. Keene, medallist and first-class certificate; Archie L. Robertson, first-class certificate; Charles M'Pherson, second-class certificate.

Hygiene and Dietetics—John S. Keene, medallist and first-class certificate; Archie L. Robertson, first-class certificate; Charles M'Pherson, second-class certificate.

Allen Thompson Gold Medal for the best professional examination on *Anatomy*—David G. Wishart.

Three Foals in One Season.

Recently, in "Turf and Stud Gossip," in *Horse and Hound*, a rather remarkable case of a mare at Lord Middleton's stud at Birdsall was referred to. She is a hunter mare, and produced three foals this year. She was served in 1914 by Jovial, a son of Bay Ronald and Merry Miser, on June 3, and by Crathorne (by Donovan out of Lady Lena) on June 19 and 20. She cast twins on Jan 9, and on May 23 had a good chestnut colt.

The following comments appear in *Horse and Hound* of last Saturday:

John Hubby, the well-known stud groom at Welbeck, writes as follows:—"I must confess I never experienced such a case as you refer to. I notice the mare is a hunter, and it generally happens that hunting mares are not housed and managed exactly like thoroughbreds; and before accepting everything in detail I should like a few points made quite clear: (1) Was the mare quite by herself when she slipped? (2) Was she running with other mares? If so, she may have been blamed innocently. I have known several instances where mares have been blamed for slipping, but subsequently proved to have been confused with other mares."

These are, of course, reasonable queries, but it may be pointed out that even were the mare running with others when the slipping occurred it would not necessarily follow that she was not the mare concerned. But we should like to say that Robert Thornton, Lord Middleton's stud groom, is a very reliable man, and is not likely to make an error in a case of this kind.

G. Lattimer, Lord Rosebery's stud groom at The Durdans, thinks that the single colt was got at the first service, on June 3, by Jovial, and the twins by Crathorne subsequently, as "the single colt must have been separate from the twins or he could not have lived to foal so long after they were cast. Twins are born in one cleanse, got in one service; foals born in two cleanses are got in two different services, which must have been the case here. I have never heard of a case such as that mentioned."

Harry Sharpe, who is looking after The Tetrarch at Ballylinch, Thomastown, writes:—"I have never met with or even heard of a similar case. I have heard of cases of a dead twin being slipped and a few weeks later a healthy living foal being presented. The dates of service—viz., Jovial June 3, Crathorne June 19, 20—do not help much, as the living foal on May 23 could have been the result of either of the three services. Nor does the colour of the foal throw any light on the point, as Jovial is a bay, and Craythorne a brown. Unless the living foal bears a marked resemblance, in conformation and character to one of the two sires concerned, the whole business is a knotty problem."

R. T. Ashby, the stud groom at Southcourt Stud Farm, says:—"I cannot call to memory a similar case; but I have in mind that a mare in foal to St. Frusquin prepared to foal in January or earlier, running milk, etc.

Then all symptoms passed away, and in April she foaled a dead mummified foetus and a healthy filly foal, which was afterwards trained. The case you cite is not impossible by any means, but extremely uncommon. I have been told, from quite a reliable source, of a mare being covered, and then foaling to her previous year's service within a fortnight."

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, July 15.

REGULAR FORCES. ARMY VETERINARY CORPS.

J. McNaught to be temp. Qmr. with hon. rank of Lieut. Dated July 7.

July 16.

Major R. H. Holmes to be temp. Lt.-Col. while holding an appointment as Asst. Director of Vety. Services. Dated March 17.

Lieuts. (on prob.) from Spl. Reserves to be Lieuts. :— S. L. Slocock, W. A. I. Buchanan. Dated July 17.

July 20.

Major E. Brown, D.S.O., to be temp. Lt.-Col. Dated July 21.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

July 15.

Lieut. A. J. Curtis to be Capt. Dated June 4.

July 16.

To be Lieut. :—W. Sime. Dated July 17.

TERRITORIAL FORCE RESERVE.

July 17.

Lieut. G. Henderson, from the T.F., to be Lieut. Dated July 18.

OVERSEA CONTINGENTS.—CANADIAN A.V.C.

July 16.

Capt. A. B. Cutcliffe (Asst. Director of Vety. Services) to be temp. Major. Dated March 13.

The following casualty in the Expeditionary Force is reported from the Base under date July 1 :—
DIED—Cpl. W. Devine, 496. A.V.C.

MEDITERRANEAN EXP. FORCE. ARMY VET. CORPS.

The following casualty is reported :—

WOUNDED—Pte. A. F. Hawker, 4699.

CONCESSION TO THE R.A.M.C.

Sir,—To-day's papers give a report of Lord Midleton's statement in the House of Lords, that all medical officers with six months' service are to be given the rank of Captain.

Now, Sir, let us hope that our Council and Profession will seriously take steps to obtain a similar concession for A.V.C. officers. Many have made great sacrifices, and are suffering financially and otherwise. It will be very hard if Veterinary Officers are treated differently to those of the R.A.M.C.—Yours, etc.,

The Editor, *V.R.*, 22/7/15.

M.R.C.V.S.

Personal.

Sir JOHN M'FADYEAN has recently been elected a Honorary Fellow of the Royal Society of Medicine.

At the R.A.S.E. show at Nottingham, a 1st, and reserve for cup was awarded for Harness Mare or Gelding (novice) over 15 hands high, to Mr. J. BAIRD, M.R.C.V.S. (Ideal). In the class for over 15 h., not exceeding 15 h. 2 in., Mr. J. M'CALL, M.R.C.V.S., was second with Burnhead Lady Campion.

The estate of Lieut.-Colonel JOHN DALRYMPLE EDGAR HOLMES, M.D., who died at Bareilly, India, Feb. 28, has been admitted to probate at £3521.

OBITUARY.

JOHN WIGGINS, F.R.C.V.S., Market Harborough.

Graduated, Lond. : May, 1861.

Mr. Wiggins' death occurred on Thursday, 15th inst., at the age of 79 years.

CARLESS—On June 30th, at Eastbourne Lodge, Worcester, the dearly beloved wife of W. Stanley Carless.

The University of Liverpool.

EXAMINATION RESULTS—SCHOOL OF VETERINARY SCIENCE. (JULY).

Degree of Doctor of Veterinary Science (D.V.Sc.)—John Share-Jones.

Degree of Bachelor of Veterinary Science (B.V.Sc.) (First Examination)—Cowking Hargreaves.

Breach of Warranty.—Cow.

At Lismore Quarter Sessions, before County Court Judge David Fitzgerald, K.C., an action for £8 was brought by William Fitzgerald, blacksmith and farmer, Glenbeg, Dungarvan, against Laurence Byrne, of Lyre, Lismore, for an alleged breach of warranty, in the sale of a cow, by the plaintiff, from the defendant, at Cappoquin October Fair, 1914. Mr. John F. Williams, solicitor for the plaintiff, and Mr. Jas. Murray, solicitor, defended.

Mr. Williams said his client, after considerable trouble, bought the cow from defendant's wife for £6 10s. From that time until the 25th October, the day the cow died, it was ailing and didn't feed. The cow was sold as being healthy on the fair day. Fitzgerald went to Mrs. Byrne and her son the evening the animal died and asked them to come to the port-mortem, but they did not do so. Mr. Lynch's certificate (produced) states that on the 26th, he made a post-mortem examination, on the body of a red and white milch cow, seven year old; the lungs were inflamed, and the kidneys inflamed, and the animal appeared to be suffering from peritonitis and, from the lesions, was probably tuberculous. The defendant came to Dungarvan later, having wired to plaintiff to meet him there, and negotiations for a settlement at £7 failed. The case was to have come on at January Sessions, but was adjourned, as it was also from the last sessions, on the application of Mr. Murray.

William Fitzgerald, sworn, corroborated the statement made by Mr. Williams, the defendant's wife sold the cow to him as being sound and healthy. He asked why the cow was kept in at that time of the year, as it had a sign on its quarter from lying on the litter. Mrs. Byrne said they had poor grass for making up a cow for sale. She also said the cow had calved three weeks previous and that the animal milked three or four quarts in the day. She also said the calf was half reared. She did engage the cow as sound. It was a long journey and he did not mind the animal the first night, and he kept her in a house. The next night he let her out to grass, and noticed her the following day lying down all the time in the field, and she did not feed from first to last, although he gave her cabbage and bran and some pollard.

Cross-examined by Mr. Murray, witness said Dan McGrath, victualler, did look at the cow, at his request, on that day. He walked the cow home with a rope that day. It was 10 or 11 miles of a drive, but he did it slowly.

Mr. Murray stated that they admitted the warranty.

Mr. Maurice Lynch, V.S., Dungarvan, stated that the animal died of nephritis—inflammation of the kidneys; it had a chronic right kidney, and suffered from chronic peritonitis. It was of long standing, and would have been of six months standing at least.

Cross-examined by Mr. Murray: He was absolutely certain that the disease was there the day of the sale and could not have been contracted since.

Bridget Byrne, wife of the defendant, examined, stated that the reason she sold the animal was because it was a trespasser and they were fined at the Court.

His Honour: They don't generally trespass if they have good stuff at home.

To Mr. Murray witness said, she never saw anything wrong with the cow.

To his Honour, witness said the calf of the cow was two months old at the time of the sale, and she did tell the plaintiff it was only three weeks old (laughter).

His Honour: These people admit these statements as a matter of course.

Mr. Carroll: Your Honour has purchased horses occasionally (laughter).

Mr. Cyril P. Hynes, V.S., Lismore, said that Mr. Lynch, V.S., probably found all the lesions present as he had stated, but a cow may be thin from a good many causes. He didn't see the cow at all (laughter).

His Honour gave a decree for £6 10s., and allowed two guineas costs to Mr. Lynch, V.S.—*The Cork Examiner*.

Pekinese Breeding.—Claim against Spratts Ltd.

SCOTT v. SPRATTS, LTD., and ANOTHER (FULLER, MIDLEY & CO., THIRD PARTIES). In the King's Bench Division, before Mr. Justice Avory, on Tuesday, July 13, Mrs. Nellie Scott, wife of Mr. William Scott, trading as "Mrs. Hill Scott," dog breeder and fancier, 53 Warwick Avenue, Maida Vale, brought an action against Spratts, Ltd., manufacturer of dog biscuits, etc., and Daniel Quay, retail grocer, 1 Formosa Road, Maida Vale, claiming damages for breach of warranty of puppy biscuits supplied by the first defendants as "absolutely pure and wholesome and of the highest quality," and purchased by her from the second defendant, her allegation being that a number of valuable Pekinese puppies she had bred had died as the result of eating the biscuits.

Spratts, Ltd., in defence, denied the warranty, and pleaded that they did not supply the biscuits to Mr. Quay, but to the third parties—Fuller, Midley & Co.—who sold to Mr. Quay. Mr. Quay pleaded that he sold the biscuits in the same condition as they were when he purchased them.

Counsel were: For plaintiff—Mr. Elkin (instructed by Wildey Wright); for Spratts, Ltd.—Mr. Schiller, k.c., and Mr. C. Lacey Smith (instructed by Bristows, Cook, and Carpmal); for Mr. Quay—Mr. J. R. Randolph, k.c., and Mr. F. Barrington Ward (instructed by Freke Palmer); for Fuller, Midley & Co.—Mr. A. E. Hughes (instructed by Truett & Francis).

Plaintiff stated in her evidence that after the puppies became ill, she examined the biscuits, and saw they were in bad condition. The father of "Tango" was sold for £500.

Nellie Trumper, her domestic servant, stated that when delivered the biscuits were kept in a safe in the house.

Mr. W. Scott, husband of plaintiff, gave corroborative evidence. Witness added that when Mr. Deale, the representative of Spratts Patent, Ltd., tasted one of the biscuits he spat it out, and asked for some whisky. He said they were "enough to poison anything."

Mr. Alfred Heinemann, proprietor of a hospital for

dogs at Canterbury Terrace, Maida Vale, and formerly a breeder of Pekinese puppies, stated that he had had eight or nine years' experience in the treatment of dogs. He made a post-mortem examination of Mrs. Scott's puppies, and in his opinion the cause of death was ptomaine poisoning.

Mr. W. Urquhart, M.R.C.V.S., gave evidence to the effect that the symptoms exhibited by Mrs. Scott's puppies were consistent with ptomaine poisoning.

Cross-examined by Mr. Schiller, witness admitted that the symptoms were also consistent with canine typhus, which often followed distemper. If canine typhus broke out in a kennel it would run through the kennel.

The hearing was continued on Wednesday, 14th.

Mr. Schiller, on behalf of Messrs. Spratts, Ltd., submitted yesterday that there was no case to go to the jury on the ground that there could be no breach of warranty when there was no contractual relationship between the parties.

Mr. Elkin, for the plaintiff, said to-day that Messrs. Spratt advertised their biscuits as absolutely pure and wholesome and "dietetically perfect." Those statements constituted a warranty which was not merely limited to the time when the biscuits left Messrs. Spratts' premises, but rendered them liable to anyone who bought the biscuits on the faith of the advertisements. He relied on *Carlill v. Carbolic Smoke Ball Company* ([1893] 1 Q.B., 256).

Mr. Schiller submitted that there was no evidence of any breach of warranty. At the highest Messrs. Spratts warranted that they made a biscuit which was dietetically perfect, and no evidence had been given that the biscuits were not perfect when they left Messrs. Spratts' premises.

Mr. Randolph, for Mr. Quay, submitted (1) that there was no evidence that the bag of biscuits supplied by Mr. Quay on June 13 was unfit for food at the time of delivery; (2) that there was no evidence that the dogs died of ptomaine poisoning; and (3) that there was no evidence that the plaintiff in buying the biscuits relied on Mr. Quay's skill and judgment.

Mr. Justice Avory said that he would allow the case to go to the jury as against both defendants, reserving the questions of law which had been raised for further consideration.

Mr. Lacey Smith opened the case on behalf of Messrs. Spratt.

Mr. F. W. Cousens, M.R.C.V.S., a partner in Sewell and Cousens, who had been "canine surgeons" to Queen Victoria and King Edward VII., and were canine surgeons to the present King and to other members of the Royal Family, said that he had inspected some of the biscuits sold to the plaintiff about a fortnight ago. He found no mould, but he noticed that some of the biscuits were slightly stained. He could not say whether the biscuits would have an injurious effect on puppies. The symptoms exhibited by the dogs as they had been described yesterday indicated canine typhus and not ptomaine poisoning.

Mr. Otto Hehner, a past President of the Society of Public Analysts and Vice-President of the Institute of Chemistry of Great Britain and Ireland, said that he had been chemical adviser to Messrs. Spratt for 30 years. In July last part of a bag of biscuits was handed to him for analysis. The bag was stained with some brown fluid. He could not discover what it was, but it was not poisonous. Some of the biscuits were quite normal, and others had been moistened with the fluid. He came to the conclusion that the biscuits had been moistened with a non-injurious fluid and that they had become damp and had developed mould. Anything showing traces of mould would be unfit for food.

Cross-examined.—Mouldy biscuits should not be given to a dog. He thought that Pekinese puppies would have an educated taste and would revolt at such food. If they did eat them it would be highly improbable that they would cause their death.

By Mr. Justice Avory.—Of the biscuits he examined less than one-half were affected.

Mr. Randolph adopted the evidence of these two witnesses on behalf of the second defendant.

Mr. E. H. Deale, a traveller in the employment of Messrs. Spratt, said that on July 23 he went to the plaintiff's house and examined the biscuits. They were kept in a meat safe. The bag was badly stained. In the same safe was part of a bag of "melox." There was no sign of mould in the biscuits. He did not say to the plaintiff that she was entitled to compensation and, no doubt, would get it. He never said that the biscuits were enough to poison anything.

Cross-examined.—The smell of the biscuit gave him an irritation in his throat, and he said that he would go out and have some whisky. Mrs. Scott then asked him to have a drink.

After some further evidence had been given by the secretary and a director of Messrs. Spratt to the effect that no biscuits had been supplied direct by them to Mr. Quay, and that all biscuits were in good condition when they were sent out from their factory, Mr. Randolph opened the case for Mr. Quay.

In giving evidence, Mr. Quay said that he bought the biscuits sold to the plaintiff from Messrs. Fuller, Medley & Co. The bags were perfectly clean when he received them, and were in the same condition when he sent them out.

In cross-examination, he said that he had dealt with Messrs. Fuller, Medley & Co. for 22 years, and their goods had always been satisfactory. The biscuits were kept in a cellar where hams and bacon were occasionally boiled in a copper. There was no chance that the biscuits had become damp owing to the steam from the boiling.

Corroborative evidence was given by assistants from the witnesses shop.

At the conclusion of counsel's speeches, Mr. Justice Avory said he would sum up the case to the jury tomorrow.

His lordship said that in these times, when every shilling was required for the purpose of preserving our existence as a nation and saving us from worse horrors than canine typhus, it was shocking to hear of such a sum as £500 being wasted upon a lady's pet, which was of no use except to be carried about as a doubtful ornament or dragged along by a string. So long as there were people foolish enough to pay such prices for pet dogs there would be others who would make it their business to breed such animals. The main question in the case was whether plaintiff had satisfied the jury that her puppies died in consequence of eating Spratt's puppy biscuits.

The jury found that the death of the puppies was not caused by eating Spratt's biscuits or biscuits supplied by Mr. Quay.

His lordship entered judgment for defendants with costs, and refused a stay of execution.—*The Daily Telegraph*.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)			(a)	
Gr. BRITAIN.											
Week ended July 17	7	13			1	1	23	84	1	82	414
Corresponding week in											
1914 ...	13	22			5	8	25	33	2	93	796
1913 ...	3	7			4	8	27	59	1	57	591
1912 ...	11	15	4	38	9	12	36	60	1	42	666
Total for 29 weeks, 1915	381	436			30	47	†495	†1094	158	2317	11902
Corresponding period in											
1914 ...	474	513	11	74	64	164	1452	2549	149	2435	25440
1913 ...	336	368			100	272	1761	3628	123	1418	19141
1912 ...	524	588	49	290	101	203	2198	4830	165	1973	25246

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, July 20, 1915

† Counties affected, animals attacked: London 1,

‡ Figures for sixteen weeks only.

IRELAND.	Week ended July 17	...	...	...	...	...	...	Outbreaks 4	2	8	24
Corresponding Week in {	1914 ...	...	...	1	2	...	...	1	2	7	16
	1913 ...	...	...	...	...	...	...	1	7	3	14
	1912 ...	...	...	...	64	...	...	...	...	8	44
Total for 29 weeks, 1915		...	1	1	1	3	44	262	154	871
Corresponding period; in {	1914 ...	1	1	76	957	...	...	53	361	133	687
	1913 ...	...	...	...	...	...	...	93	340	93	564
	1912 ...	2	2	16	195	...	...	46	262	153	1357

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, July 19, 1915.

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

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FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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PROFESSIONAL JOURNALS.

One of the chief functions of a professional journal is the discussion of professional problems. By publishing such discussion, either in the form of articles, clinical records, or reports of meetings, the journal assists professional progress at the time, and provides material for the historians of the future. It is doubtful whether any veterinary journal can discharge this function quite adequately even now, and it is certain that for most of our history it was discharged very inadequately indeed.

One example of old times must suffice. *The Veterinarian* was founded when bleeding was in full vogue, and was one of the commonest procedures in everyday veterinary practice. For nearly fifty years such opposition as *The Veterinarian* encountered was slight and short-lived; and practically it may be called our only professional journal throughout that period. We all know the complete revolution in the profession's ideas regarding bleeding that took place during that time, and the considerable change in everyday practice that resulted.

That revolution was certainly not effected without much careful thought and private discussion by practitioners. But if we search the old *Veterinarian* for published discussion or comparison of notes upon the merits and demerits of bleeding, we find astonishingly little. It cannot quite be said that we find nothing; but there is nothing at all comparable with the importance of the subject. In other words, the practitioners settled the question of bleeding amongst themselves, practically without help from their journal.

Matters have certainly improved since then. Two of the greatest veterinary revolutions of the last twenty-five years have been the popularisation of general anaesthesia and the introduction of the udder treatment for milk fever. Both were accompanied by abundant discussion in the professional press; and that marks improvement. But both might well have been further discussed at the time; and many other professional problems remain little discussed to day—and that shows the need for yet more improvement. Every practitioner could name many questions concerning which he requires information, and would be glad to read more than he can find in the journals. It is a pity that so few attempt to use the journals for a comparison of notes—as all are free to do—and that so many continue to keep their experience and thoughts to themselves as did the old subscribers to *The Veterinarian*.

EXPERIENCES WITH STREPTOCOCCUS AND STAPHYLOCOCCUS VACCINE.

By. J. P. ISHERWOOD, M.R.C.V.S., Blyth.

Case I. Bay two-year-old draught colt, the property of a farmer near Blyth: had been suffering from strangles about a week before I saw it (Feb. 10, 1915). The disease then appeared to be taking a normal course and was discharging freely from both nostrils, etc. The next day the head was enormously enlarged and looked like that of a rhinoceros; the buccal membranes were enormously thickened and mastication was almost impossible.

I injected one tablet of Combined Streptococcus and Staphylococcus Vaccine 500 million (P. D. & Co.) On the 14th February I visited the colt and found the swelling had disappeared. The animal was feeding well, and the discharge from the nostrils had diminished and was less purulent. I injected another tablet, containing 100 million bacteria, for safety, and the colt made a steady and uninterrupted recovery.

Case II. Brown hackney yearling on the same farm. Strangles. This was a very protracted case, and the abscesses in the region of the parotid gland and throat had persistently re-formed. On Feb. 16th symptoms of septic arthritis presented themselves, especially in the fore limbs. The joints were swollen, hot and painful, the knees were bent back. The animal had every symptom of breakdown, and had to be assisted when rising.

I injected on that day a 500 million tablet of Streptococcus and Staphylococcus Vaccine (P., D. & Co.), and did not see him again until February 25th, when I administered a further dose of vaccine. On this day he could rise himself, although his forelegs were still somewhat bent back. I visited him again a week later, and he was then progressing favourably and has since thoroughly recovered.

I have no hesitation in stating that this animal, at any rate, was saved as the result of vaccine treatment.

Case III. A black draught mare, aged, the property of the Corporation. This mare was sent to the hospital in the early part of February, suffering from strangles. The abscesses were most obstinate, and one in the region of the parotid gland kept re-forming and was opened several times, the last occasions being on February 23rd and 25th. On this latter day I administered a 500 million tablet of Streptococcus and Staphylococcus Vaccine (P., D. & Co.), and from that day the discharge gradually ceased; the mare commenced feeding and was working within a week.

It should be pointed out that the animal was off for a period of *three weeks* before commencing the vaccine treatment.

Case IV. Bay draught horse, about eight years old, the property of the Corporation. This was rather a peculiar case. On May 30th he was kicked by another horse in the thigh, and although the wound inflicted was small, the pain was so intense that he could scarcely put his leg to the ground. The injury was fomented regularly, but notwithstanding this the swelling extended from the groin to the foot, and the discharge was profuse. He was turned out to grass on June 6th, still very lame. On June 9th I injected a 500 million tablet of *Streptococcus* and *Staphylococcus* Vaccine (P., D. & Co.), and on the 13th a similar dose. Improvement was noticed on the 10th, swelling subsided and the animal walked better. The discharge had ceased on the 13th and the leg was quite normal in appearance by the 16th. On the 20th of the month the animal returned to work.

Case V. Bay draught mare, belonging to the Transport Section of the A.S.C. I was called to see her on July 1st, and found her looking very dull, with a temperature of 104°. She was hanging her head, and had a big swelling behind the right ear, which pitted at one part. I opened the abscess and let out half a gill of pus. The wound, which extended obliquely towards the left side and was fully 6 inches deep, was dressed daily, and about an ounce of hydrogen peroxide solution was injected. On examining the parts, I saw a scar in line with, and about half an inch off, the right ear, and was told it had been caused by striking a nail below the manger about the beginning of February, that is, some five months previously.

I was afraid I was going to have a complicated case of poll-evil, but decided to inject the animal with a 500 million dose of *Streptococcus* and *Staphylococcus* Vaccine (P., D. & Co.), which I did on July 5th. From the sixth day the discharge lessened, and I gave her a similar dose on the 8th. By July 12th the swelling, heat and tenderness had disappeared and the wound had scabbed over. The animal is now at work.

In conclusion, I may say that I consider it unwise for any member of the profession to be without a stock of vaccines. In my opinion their use undoubtedly curtailed the duration of the disease, and was, in two of the cases reported above, the means of saving the lives of valuable stock.

ABSTRACTS FROM FOREIGN JOURNALS.

A CASE OF LARYNGEAL ROARING IN AN ASS.

Grebe, of Bonn, has reported the following case of a she-ass, about fourteen years old. The animal had been purchased by his present owner only seventeen days before it became necessary to seek Grebe's advice. The owner's account was that the ass had repeatedly shown attacks of "staggers," and that each of these had appeared after slight exertion.

On examination, Grebe found that the animal's general condition was completely normal. The pulse was full, uniform and regular. The sounds of the heart were clear. The rectal temperature was 100.7° F. The visible mucous membranes were normal in colour. Grebe also states that pressure upon the upper part of the trachea caused coughing movements which were carried out with the glottis open. Elsewhere, no symptoms of disease of any kind could be found either in the respiratory or the digestive apparatus.

With a view to further investigation, the ass was now harnessed to a light cart and driven at a moderate trot. After she had covered about two hundred yards an abnormal inspiration sound became audible; and this quickly increased to a rattling sound which was audible at a considerable distance, and later to a roaring sound. The animal soon stopped and stood still, extended the fore limbs apart, showed violent dyspnea, swayed and threatened to fall. Recovery took place gradually, after the widely dilated nostrils had been compressed somewhat with the palm of the hand.

The age and insignificant value of the animal rendered the owner disinclined to have tracheotomy performed; so an attempt was made to use the ass for quite light work. It soon became clear, however, that she was completely useless even for this; and, therefore, she was destroyed.

Post-mortem examination revealed a very marked atrophy of the whole of the laryngeal muscles upon the left side, especially the crico-arytenoidei postici and laterales and the arytenoideus transversus. The affected muscles were flattened and had a dull fawn-red colour, while the muscles on the right side of the larynx were normal, both in colour and thickness.—*Berliner Tier. Woch.*)

A PECULIAR FRACTURE OF THE VERTEBRAL COLUMN IN THE HORSE.

Vogt, an abattoir director of Weissenfels, has recorded the following case, which came under his notice at the abattoir.

The history, as Vogt could gather it, was as follows:—the animal, a five-year-old chestnut riding gelding, was said to have sustained an accident while being shipped from England, and in consequence of this to have showed some uncertainty of the hind quarters in progression.

After being rested for some time in the dealer's stable, he was sold without warranty. The new purchaser rode him for about seven weeks at all kinds of paces. The rather uncertain movement of the hind quarters was attributed to an alleged affection of a hind limb, which the dealer had advanced as the cause of the defective progression, but which was not found to be present at the subsequent autopsy. It is important to note that, soon after the horse came from the dealer, the purchaser and his groom both noticed a certain irregularity in the line of the back, which showed a distinct depression behind the situation of the saddle.

After being about seven week's in the purchaser's possession, the horse, after a ride, became very

much worse in the hind quarters. The condition worsened every day thenceforward; slinging soon became necessary; and finally, about eight days after the first visible deterioration, the horse was destroyed as incurable.

Vogt's post-mortem examination resulted as follows. A fracture was found in the articulation between the bodies of the last dorsal and first lumbar vertebrae. For the most part this fracture consisted of a separation of the fibrous cartilage from the last dorsal vertebra; but in its under part a small strip of bone about an inch in length was split off from the last dorsal vertebra, and remained still united to the first lumbar vertebra by means of the articular fibrous cartilage.

The fibrous cartilage, at the seat of the fracture, was splintered in pieces and saturated with hæmorrhage. The first lumbar vertebra also, up to about $1\frac{1}{2}$ inch away from the joint, showed a fresh hæmorrhagic infiltration.

The spinal canal, above the fractured joint, was curved downwards so that the canal in the first lumbar vertebra lay three-fifths of an inch lower than in the last dorsal vertebra. The spinal cord shared in this curvature. In the spinal canal, between the bone and the spinal dura mater, there were fresh blood clots. There was also a separation of the oblique processes of the last dorsal vertebra from those of the first lumbar vertebra.

If the upper line of the back was examined in profile, a wave-like elevation of about three-fifths of an inch above the normal surface of the back was seen about the posterior end of the saddle region. This elevation had come about through the sinking of the first lumbar vertebra and those succeeding it and the elevation of the last dorsal vertebra, especially the last of all. The fibres of the muscles between the spinous processes of the last dorsal and first lumbar vertebrae took an oblique course from forwards and above to backwards and downwards, while the direction of the fibres between the other spinous processes was horizontal. There was, however, no hæmorrhage or infiltration to be found either in the muscles or the supra-spinal ligament, or upon the surface of the back.

The case was therefore one of a fresh fracture in the joint between the last dorsal and first lumbar vertebrae. But a similar fissure or fracture must previously have occurred at the same place, perhaps through the above-mentioned accident on the voyage. The previously observed obliquity between the last dorsal and first lumbar vertebrae, the absence of all infiltration in the elevation itself and the surrounding muscles, and the alteration in the direction of the muscular fibres between the spinous processes of these two vertebrae, all indicated an old united fracture. There was no doubt, also, that the old fracture had been the cause of the new one.

Vogt does not think that there could have been a congenital curvature of the vertebral column, as in that case the curvature would not have been so abrupt, but more gradual.

The case is of interest in various directions. It shows that a fracture in one of the joints of the vertebral column may be curable. If this horse,

instead of being ridden, had been used for light harness work, he might have been serviceable for a long time. A further point of interest is the fact that the spinal cord, despite its curvature at the seat of the fracture, still retained its conductivity fairly well; for the horse was ridden seven weeks at all paces, and only showed a slight disability of the hind quarters. Finally, the case teaches that every sharply defined depression of the line of the back should awaken the suspicion that a fracture of the vertebral column has taken place.—(*Berliner Tier Woch.*)

W. R. C.

THE HUNTING MEMORIAL FUND.

Report of the Honorary Secretary read to the General Committee of the Hunting Memorial Fund at its second meeting, held at the Royal College of Veterinary Surgeons, 10 Red Lion Square, W.C., on Tuesday, July 6th, 1915.

The Hunting Memorial Fund was suggested to me by Mr. Joseph Emerton, one of the late Mr. William Hunting's closest personal friends outside the profession. That gentleman approached me the day following the funeral of our lamented friend and confrère with the object of raising a small fund for the purpose of erecting a tombstone (the cost of which Mr. Emerton approximated at £80), because the incomes of Miss Louisa Hunting and Mr. F. C. Hunting would not permit their doing, so in memory of their dear father. Mr. Joseph Emerton being a practical man supported his suggestion with the offer of hard cash, and this latter induced me to take the matter up and bring it before the notice of the profession, and, after consulting with a few professional friends, notice of a meeting was published through the medium of *The Veterinary Record*, 5th November, 1913.

This preliminary meeting was held at the Royal College of Veterinary Surgeons, 10 Red Lion Square, W.C., on Thursday evening, November 13th, 1913. A general Committee and also an acting sub-Committee were constituted, Prof. Macqueen being chosen as Chairman, and myself as Hon. Sec. and Treasurer.

After some discussion, it was decided that a tombstone or monument should be erected upon the grave of the late Mr. Hunting, and, on the suggestion of Mr. Joseph Emerton, that an extra plot of ground adjoining the grave should at once be purchased. What further steps should be taken would be decided later.

Mr. Joseph Emerton suggested an extra plot of ground which he, as a parishioner in the Borough of Wandsworth, might be able to purchase at £5, instead of £15 which would be the charge to an outsider of the borough, and he was empowered by the sub-Committee to effect purchase without delay.

At the close of the meeting it was announced that £19 19s. had already been received, not only from members of the profession, but also from some of Mr. Hunting's lay friends or admirers; and that £21 was promised, so the fund was on a sound financial basis before it was even inaugurated.

A second sub-Committee meeting took place at the Royal College of Veterinary Surgeons on December 12th, 1913, at 7.30 p.m., when Mr. Joseph Emerton reported that he had, as desired by the sub-Committee, purchased the extra plot of ground at the cost of £5, and that as soon as the certificate was obtained for same, a transfer would be made to Miss Hunting.

A draft of a circular-letter to be issued to gentlemen constituting the general Committee was considered, and

on the proposition of Sir John McFadyean, which was seconded by Mr. R. C. Irving, it was unanimously agreed that the draft should be accepted and issued as drawn. At this stage, many informal suggestions were made regarding the necessity of providing permanent financial assistance for Miss Hunting and her brother. Prof. Macqueen and myself thought that, as Mr. William Hunting had never received any recognition from the State for the long distinguished services he had rendered to veterinary science and to the State, his children in the circumstances had a very good claim on the Government for a pension under the Civil List Act, 1910.

Without any waste of time and with a strong belief in the justness of the claim, we drafted a form of petition and sent it to Mr. J. H. Carter, President of the R.C.V.S., as nominal head of the profession, who gave it his blessing and signed it. This was afterwards forwarded to Mr. George Thatcher for consideration and technical revision.

The first meeting of the General Committee was held at the Royal College of Veterinary Surgeons on January 9th, 1914, when the Chairman, Prof. Macqueen, informed the members present that the meeting was called to receive the report of the sub-Committee regarding the progress of the fund. After some discussion, Mr. Trigger suggested that it might be advisable to invest the fund in some trust for the Hunting children, and at their death the capital should revert to the profession for the establishment of a Hunting Memorial. He wished this to be taken only as a suggestion and not as a proposition. It was incidentally mentioned to the meeting that we were about to approach the Treasury for a pension from the Civil List for the Hunting children, and our proposed action was considered as highly desirable though not very hopeful.

During the months of January, February and March, 1914, I addressed and posted several hundred circular-letters to the various members of the profession in the United Kingdom, in the Colonies, in India, etc., who constituted the General Committee.

The third meeting of the sub-Committee was held at the Royal College of Veterinary Surgeons on February 20th, 1914, to consider the Petition form to be sent to the First Lord of the Treasury. Mr. Geo. Thatcher kindly attended with a petition drafted in proper form, and gave us the benefit of his advice. After some discussion the form was accepted. We then considered who should be asked to sign it, and finally we agreed upon a list of names.

Mr. Geo. Thatcher prepared the Petition form, Messrs. H. & W. Brown printed it as well as the envelopes in which it was sent out and returned, and Mr. Fred Bullock, Secretary R.C.V.S., sent it out to those names on the list drawn up by the sub-Committee. Two forms of letters to be enclosed with the Petition forms were suggested by Mr. Thatcher, approved by me, and signed by Mr. J. H. Carter, President R.C.V.S.

Besides the numbers sent out by Mr. Bullock, numerous other forms were sent out by myself. Many names were suggested by Prof. Macqueen, and others by Dr. Cartwright Wood who was a warm admirer of our lamented friend.

The Petition was signed by distinguished noblemen—the Duke of Norfolk (premier Duke), the Duke of Richmond and Gordon, and the Marquis of Lincolnshire; distinguished Members of Parliament, Chancellors and Vice-Chancellors of Universities, Lord Mayors and Mayors, Principals of Colleges, the Teaching Staffs of Medical Colleges and Agricultural Colleges, distinguished physicians and surgeons, eminent men of science, Chairmen of County Councils, the Medical Department of the L.G.B., Medical Officers of Health, the Director of Remounts, the Inspector-General of Cavalry, Officers of the Household Cavalry, etc. The Petition was supported by the London County Council, the Lister Institute

of Preventive Medicine, the Royal Sanitary Institute, etc. Our own profession gave much valuable assistance, and every Veterinary Society and College was represented on the Petition.

The Petition was presented to the First Lord of the Treasury, the Right Hon. H. H. Asquith, by Mr. George Thatcher, on 27th May, 1914. After that, so many signed petition forms continued to come in that Mr. Thatcher had to cry "enough."

On August 20th, 1914, the Royal Society Committee appointed by the Government to enquire into the claims of the applicants for Civil List Pensions considered our Petition and granted our claim to a pension for the Hunting children.

On August 25th, 1914, Miss Hunting received a letter from the Treasury which intimated that, on the recommendation of the Prime Minister, the King had been pleased to award to her and her brother, jointly and to the survivor, a Civil List pension of £50 in consideration of the services rendered to Veterinary Science and Practice by the late W. Hunting and of their inadequate means of support. The pension was ante-dated so as to commence from 1st April, 1914.

In June, 1915, the grant was made public through the issue of a Parliamentary White Paper.

During the period from the initiation of the Fund to the present time, donations from Veterinary Societies, British as well as Colonial, members of the Veterinary profession—British and Colonial—and private and medical friends of the late Mr. Hunting, were received, and on June 30th, 1915, the Fund amounted to £373 12s., out of which we have expended £1 8s. 2d., leaving a balance in the bank of £372 3s. 10d. We still owe £5 for the extra plot of ground, and £3 18s. 10d. for postage. Donations, I am pleased to say, are still coming in.

An estimate for a stone of a design selected by Miss Hunting, to be placed over her dear father's grave, has been considered and approved by the sub-Committee. The cost of the stone will be £87, with certain extras for the inscription.

Financial position of the Hunting Memorial Fund, 1913-1915.

	£	s.	d.
<i>Subscriptions received up to June 30th, 1915</i>	373	12	0
Banker's charges: Cheque book, 2/6; Charges on cheques, 5/4	...	7	10
Postage on Petition forms paid to Mr. Fred Bullock	...	1	0
	...	8	2
Balance at Bankers	£372	3	10
Outstanding debts:	£	s.	d.
Mr. Joseph Emerton for extra ground	...	5	0
Postage on circular-letters and Petition forms	...	2	16
Postage and stamps on receipts	...	1	2
Mr. George Thatcher's Law charges	...	nil	
Messrs. H. & W. Brown for printing Circulars, Petition Forms and Envelopes	...	nil	
Hon. Secretary's Stationery	...	nil	
	£8	18	10
Examined and found correct,			
W. WOODS } Auditors.			
HUGH BEGG }			

5th July, 1915.

The sub-Committee desire to bring before the notice of the General Committee the names of several gentlemen who have taken an active part in procuring the

signatures of prominent noblemen, distinguished men in politics and local government, in agriculture, science and medicine.

First of all comes Mr. W. Legge Symes, M.R.C.V.S., of the Physiological Laboratory, University of London, who voluntarily and with great goodwill procured the signatures of the Chancellor (Lord Rosebery), the Vice-Chancellor, and practically the whole of the medical teaching staff of London University.

Lord Claud Hamilton, M.P. for South Kensington, who not only signed the Petition himself, but voluntarily secured the signatures of several distinguished Members of Parliament.

Professor John Penberthy, Governor of the Royal Agricultural College, Cirencester, who not only obtained the signatures of prominent members of both Houses of Parliament, but also induced them to use their influence with the Prime Minister.

The Principal of the Royal Agricultural College, who took upon himself to procure the signatures of distinguished noblemen and others with large interests in agriculture and indirectly in Veterinary science.

Dr. G. E. Cartwright Wood, who suggested that Mr. Fred G. Hallett, Secretary of the Conjoint Board of the R.C.P. and R.C.S. should be asked to procure signatures of distinguished members of the medical profession. Mr. Hallett kindly responded promptly with a long list of signatures.

Professor Robert Howden, University of Durham, who obtained the signatures of the principal members of the medical teaching staff, etc., of his school, etc.

Dr. E. Bashford, Director of the Imperial Cancer Research Fund, who obtained the signatures of a great number of distinguished medical scientists.

Dr. G. E. Low, London School of Tropical Medicine, London Docks, E., who procured many signatures of the staff of his institution.

Mr. Wm. Freeman-Barrett, who induced Viscount Peel, the Chairman of the L.C.C., to take an interest in the matter, with the result that the London County Council supported the petition.

Mr. John Malcolm, F.R.C.V.S., who obtained the signatures of the Lord Mayor of Birmingham, the Vice-Chancellor of the University, and other prominent officials of the City of Birmingham.

Veterinary-Captain Graham Rees-Mogg, F.R.C.V.S., 1st Life Guards, who not only obtained the signatures of most of the officers of the Household Cavalry, but who personally wrote to every officer of the A.V.C. at home and abroad asking them to subscribe to the Hunting Memorial Fund, and his appeal brought a favourable response.

Mr. R. L. Phillips, F.R.C.V.S., Loughborough, Leicestershire; Mr. Thomas Parker, F.R.C.V.S., Newcastle-on-Tyne; Mr. W. Cargill Patrick, F.R.C.V.S., Mullingar; Mr. W. J. Mulvey, F.R.C.V.S., Chelsea, S.W.; Mr. J. W. Edwards, M.R.C.V.S., Kingston-on-Thames; Mr. J. W. Brittlebank, M.R.C.V.S., Manchester; Mr. Wm. Woods, F.R.C.V.S., Wigan; Mr. F. W. Stanley, M.R.C.V.S., of Messrs. Carter, Paterson & Co.; the late Mr. J. B. Martin, M.R.C.V.S., Rochester; Mr. A. Santy, F.R.C.V.S., Norwich; Mr. T. Salusbury Price, M.R.C.V.S., Kennington, S.E.; Mr. H. G. Lepper, M.R.C.V.S., Aylesbury; Mr. J. Ewing Johnston, M.R.C.V.S., Belfast; Mr. Hugh Begg, F.R.C.V.S., Hamilton, Lanark; Prof. T. W. Cave, F.R.C.V.S., Wye Agricultural College; Mr. Geo. Banham, F.R.C.V.S., Cambridge; Mr. F. L. Gooch, F.R.C.V.S., Stamford; Mr. Alfred Over, M.R.C.V.S., Rugby.

All these gentlemen have actively promoted the success of the petition by inducing others outside the profession to subscribe their names to it. Only a few members of the profession, mostly in influential districts, were asked to obtain outside support. The majority readily responded.

It is impossible to forget the services rendered to the cause by Mr. George Thatcher. This gentleman has not only attended our sub-Committee meetings and given us his valuable advice and assistance, but he has prepared the petition form and presented the petition to the First Lord of the Treasury, without making any charge for his invaluable services. "He was glad to be able to be of service to the family of his old friend."

Mr. Fred Bullock, Secretary of the R.C.V.S., has also rendered good service to the cause. He has not only addressed petition forms to the names given in the official lists, but he has also prepared a typewritten list, and dealt with much correspondence as well as other work in furtherance of the aim of the petition.

Mr. J. H. Carter, F.R.C.V.S., President R.C.V.S., gave the petition his most loyal and active support, and co-operated with the sub-Committee in a manner which greatly assisted in bringing the enterprise to a successful issue.

Mr. F. W. Garnett, M.R.C.V.S., President R.C.V.S., has also assisted in promoting the success of the Petition.

Mr. Joseph Emerton, a great personal friend of the Hunting children, has performed valuable service to the Fund. By his practical suggestions and still more by his activity he has obtained for us the plot of extra ground at the cost of £5 instead of £15, which would have been charged to one living outside the Borough of Wandsworth in which Putney Vale Cemetery is situated. He has also obtained for us a design and an estimate for the gravestone. Furthermore, he has himself borne the law charges connected with the transfer of the plot of ground from himself to Miss Hunting.

Messrs. H. & W. Brown supplied and printed the circulars issued to the General Committee, the petition forms and envelopes and circular-letters, without making any charge.

The Veterinary press have inserted notices, lists and advertisements gratuitously.

Professor Macqueen has been a most enthusiastic supporter of the scheme from its initiation. His services have been hidden from the view of onlookers. If rather a silent colleague he has been a most loyal one. It is said that great deeds are performed in silence and not by shouting from the house-tops. The former is an attribute of the worthy Chairman of the Fund.

The donors have given willingly. The majority stated that they had never parted with money with less reluctance. Very few suggestions have been made as to the way in which the Fund should be used. Many donors have left this to the wisdom of the General Committee. Some have expressed a wish for the money to be given to the Hunting children; others desire the money to be invested and the interest given to Miss Hunting and her brother, and at their death the capital to revert to the Royal College of Veterinary Surgeons for the establishment of a Hunting Memorial in the form of a prize, bursary, scholarship, lectureship, etc. Not a few are of opinion that as part of the money has been subscribed by friends who are not members of the veterinary profession it should be invested so as to establish a memorial—partly public and partly professional—in the form of an annual popular lecture.

Donations are still arriving; more money is wanted and more will come in. It is the desire of the friends and colleagues of the late Wm. Hunting to establish a permanent and appropriate memorial to him whom they admired for his unselfish devotion to his profession and to its public welfare.

HENRY GRAY,

Hon. Secretary and Treasurer.

July 6th, 1915.

List of Signatories to the Hunting Petition.

His Grace the Duke of Norfolk, P.C., K.G., G.C.V.O.; His Grace the Duke of Richmond and Gordon, K.G., G.C.V.O., C.B.; the Most Hon. the Marquis of Lincolnshire, P.C., K.G., G.C.M.G.; the Right Hon. the Earl of Rosebery, K.G., P.C., D.C.L., LL.D., F.B.A., F.R.S.; The Right Hon. the Earl of Northbrook, Governor of the Royal Veterinary College, London, and Chairman of the General Purposes Committee; the Right Hon. the Earl Bathurst, C.M.G., Governor of the Royal Agricultural College, Cirencester, and of the Royal Veterinary College, London; the Right Hon. the Earl Fortescue, K.C.B.; the Right Hon. the Earl of Lonsdale; the Right Hon. the Earl of Durham, P.C., K.G., G.C.V.O.; the Right Hon. the Viscount Esher, G.C.B., G.C.V.O.; the Right Hon. the Viscount Knutsford, P.C., G.C.M.G., D.L., J.P.; the Right Hon. the Lord Barnard, late Chairman of the Central Chamber of Agriculture; the Right Hon. the Lord Channing of Wellingborough, Member of Royal Commission on Agricultural Depression, 1893-96; the Right Hon. the Lord Devonport, P.C., D.L., J.P.; the Right Hon. the Lord Joicey; the Right Hon. the Lord Middleton, D.L., J.P.; the Right Hon. the Lord Monkswell; the Right Hon. the Lord Moreton; the Right Hon. the Lord Redesdale, G.C.V.O., K.C.B.; Lord Henry Cavendish Bentick, M.P. (S. Notts.); Lord Claud John Hamilton, M.P. (S. Kensington); the Right Hon. the Earl of Darnley; the Right Hon. Henry Chaplin, P.C., M.P., J.P., D.L., LL.D., formerly President of the Board of Agriculture and Fisheries, Member of Royal Commission on Horse Breeding, 1887; the Right Hon. Sir Henry Enfield Roscoe, P.C., LL.D., F.R.S., D.C.L., Emeritus Professor Victoria University of Manchester, late Chairman of the Governing Body of the Lister Institute; Sir Thomas Elliott, K.C.B., Deputy Master of the Royal Mint, formerly Secretary to the Board of Agriculture and Fisheries; Sir Henry Alexander Miers, M.A., D.Sc., F.R.S., Principal of the University of London; Sir William Osler, Bart., M.D., F.R.S., F.R.C.P., Regius Professor of Medicine, Oxford University; Sir Rickman J. Godlee, Bart., B.A., M.S., F.R.C.S., M.D., President of the Royal College of Surgeons, Hon. Surgeon in Ordinary to the King; Sir Edwin Ray Lankester, K.C.B., M.A., LL.D., F.R.S., Emeritus Professor of Zoology and Comparative Anatomy London University, President of Marine Biological Association of United Kingdom; Sir James Crichton Browne, M.D., D.C.S., LL.D., F.R.S., F.R.S.E., Vice-President and Treasurer, Royal Institution; Sir Francis Duck, K.C.B., Veterinary Colonel, late Director-General Army Veterinary Department; Sir William Wyndham Portal, Bart., M.A., F.S.A., D.L., J.P.; Sir Oswald Mosley, Bart., D.L., J.P. (Staffs.); Sir W. E. Cuthbert Quilter, Bart., M.P. (Sudbury Division of Suffolk), J.P.; Sir Henry Tanner, C.B., G.C.V.O., Chairman of the Council of the Royal Sanitary Institute; Sir Francis H. Champneys, Bart., M.A., M.D., F.R.C.P., President of the Royal Society of Medicine; Sir Victor Horsley, F.R.S., F.R.C.S., Emeritus Professor of Clinical Surgery, London University; Sir Alfred Pearce Gould, K.C.V.O., M.S., F.R.C.S., Senior Surgeon to the Middlesex Hospital, Dean of the Faculty of Medicine, University of London; Sir Thomas Boor Crosby, M.B., LL.D., Member of Senate, London University; Sir Almoth E. Wright, M.B., D.Sc., F.R.S., Professor of Experimental Pathology, London University; Sir George Hastings, M.D.; Sir Shirley F. Murphy, F.R.C.S., late Medical Officer of the London County Council; W. H. Hamer, Esq., M.D., Medical Officer of Health of the Administrative County of London, and School Medical Officer; William Butler, Esq., M.D., Deputy Medical Officer of Health and Deputy School Officer for the County of London; Arthur Newsholme, Esq., M.D., C.B., F.R.C.P., Chief Medical Officer of the Local Government Board; G. Sims Woodhead, Esq., M.A., M.D., LL.D., Pro-

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O. Phillips, Esq.; R. V. Martin Hollams, Esq.; Lord Clinton.

BOARD OF AGRICULTURE AND FISHERIES (further signatures): Superintending Veterinary Inspectors—A. Holman Berry, Esq.; J. R. Jackson, Esq. Veterinary Inspectors—W. J. Wragg, Esq.; Esmond Browne, Esq.; J. H. Brown, Esq.; J. D. Broome, Esq.; F. W. H. Smith, Esq.; E. Peacey, Esq.; Wm. C. B. Revill, Esq.; J. O. Powley, Esq.; P. J. L. Kellands, Esq. Assistant Veterinary Inspectors—Chas. F. Shawcross, Esq.; J. H. Penhale, Esq.; Hedley C. D. Golledge, Esq.; J. Russell Greig, Esq.; Geo. Vincent Slinn, Esq. Edward R. Edwards, Esq., F.R.C.V.S.; Kenneth P. Rankin, Esq., M.R.C.V.S., D.V.H.; G. T. Matthews, Esq., M.R.C.V.S., A.V.I.; Robt. E. Murison, Esq., M.R.C.V.S., A.V.I.; V. A. Bartrum, Esq., M.R.C.V.S., A.V.I.; A. N. Munro, M.R.C.V.S.; W. A. E. Cabot, Esq., M.R.C.V.S.; W. J. Young, Esq., M.R.C.V.S.; J. A. Wall, Esq., M.R.C.V.S.; A. B. Fewings, Esq., M.R.C.V.S.; Vincent Boyle, Esq., M.R.C.V.S.; T. J. Millington, Esq., M.R.C.V.S.; D. B. Rogers, Esq., M.R.C.V.S.

CITY AND UNIVERSITY OF BELFAST: Crawford Mc Culloch, Esq., Lord Mayor; Wm. St. Clair Symmers, Esq., Professor of Pathology, Queen's University, Belfast; Sir John W. Byers, M.R., M.D., M.A.O., Professor of Midwifery, Queen's University, Belfast; H. W. Baillie, Esq., L.R.C.P., D.P.H., Medical Superintendent Officer of Health, Belfast, Lecturer on Public Health and Examiner, Queen's University, Belfast; J. A. Jordan, Esq., M.R.C.V.S., City Veterinarian, Belfast Corporation, President, North of Ireland Veterinary Medical Association; J. Ewing Johnston, Esq., M.R.C.V.S., Secretary, North of Ireland Veterinary Association.

TOWN AND UNIVERSITY OF CAMBRIDGE: J. A. Sturton, Esq., Mayor of Cambridge; J. A. Wootten, Esq., Alderman; C. E. Holland, Esq., Chief Constable of Cambridge; Chas. J. D. Stretton, Esq., M.V.O., Chief Constable of Cambridgeshire; A. J. Laird, Esq., M.D., Medical Officer of Health for Cambridge; Joseph Griffiths, Esq., Surgeon to Addenbrooke Hospital; Jas. E. Runciman, Esq., M.R.C.V.S.; Thomas Runciman, Esq., M.R.C.V.S. (Ely); Thomas Runciman, Jun., Esq., F.R.C.V.S. (Ely); W. Graves, Esq., M.R.C.V.S. (Cottenham); A. E. Shipley, Esq., F.R.S., D.Sc., Master of Christ College, Cambridge; Howard Marsh, Esq., D.Sc., F.R.C.S., Master of Downing College, Professor of Surgery in University of Cambridge; Hugh K. Anderson, Esq., M.D., F.R.S., Master of Gonville and Caius College, Cambridge; J. N. Langley, Esq., F.R.S., D.Sc., Professor of Physiology in the University of Cambridge; G. H. F. Nuttall, Esq., M.D., Ph.D., D.Sc., F.R.S., Quick Professor of Biology in the University of Cambridge; B. Anningson, Esq., M.D., M.A., University Lecturer and Medical Officer of Health for seven Sanitary Authorities; T. B. Wood, Esq., M.A., Drapers Professor of Agriculture; F. G. Hopkins, Esq., M.A., M.D., D.Sc., F.R.S., University Reader of Physiology; F. H. A. Marshall, Esq., D.Sc., University Lecturer on Agricultural Physiology; R. H. Biffen, Esq., M.A., F.R.S., Professor of Agricultural Botany; K. J. J. Mackenzie, Esq., M.A., A.S.J., University Lecturer on Agriculture; Cecil Warburton, Esq., Zoologist to the Royal Agricultural Society; E. Lloyd Jones, Esq., M.D., Downing College, Cambridge, University Demonstrator in Medicine; G. S. Graham Smith, Esq., M.D., University Lecturer on Hygiene.

LONDON SCHOOL OF TROPICAL MEDICINE: H. B. Newham, Esq., M.R.C.S., L.R.C.P., D.P.H., Director; C. M. Wemyss, Esq.; R. O. Sibley, Esq.

AGRICULTURAL COLLEGES: *Cheshire, Holmes Chapel*—T. J. Young, Esq., F.S.I., Principal; *Wye College*—M. J. R. Dunstan, Esq., Principal; Fredk. P. Theobalds, Esq., Vice-Principal; T. W. Cave, Esq., F.R.C.V.S., Professor; John C. Norrie, Esq., Professor; Mervyn H. Reid, Esq., M.R.C.V.S. *Ipswich, Wye College*—S. Rothwell, Esq.; Edward Gordon, Esq., Castle Douglas, Governor, Glasgow Agricultural College.

COUNTIES AND BOROUGHES: *Lanarkshire*—Thomas Munro, Esq., County Clerk; John T. Wilson, Esq., County Medical Officer; W. White, Esq., District Clerk, Middle Ward; J. Hugh Patterson, Esq., County Bacteriologist. *Loughborough*—Thomas Mayo, Esq., J.P., Mayor; Lord Ernest St. Maur, Burton Hall; Brigadier-General Burn Murdoch, J.P.; Major E. T. Baines, Secretary Notts Territorial Association; C. J. Phillips, Esq., J.P., D.L., Old Dalby Hall, Melton Mowbray; Philip W. Carr, Esq., Rempstone Hall, Loughborough; C. K. Carr, Esq., Hornton Hill, Banbury; W. F. Whetstone, J.P., The Lodge, Barrow-on-Soar; Sidney Wells, Esq., J.P., Kegworth; Abbott Robinson, Esq., J.P., D.L., Rothley Grange, Leicester; Edward H. Packe, Esq., J.P., D.L., C.C., Prestwold Hall, Loughborough; R. H. C. Fox, Esq., J.P., Maplewell, Woodhouse Eaves; W. Edmund Paget, Esq., J.P., Nanpanton, Loughborough; R. Willoughby, Esq., J.P., Prestwold, Loughborough; William Porter, Esq., J.P., Disbley Grange, Loughborough; Walter W. Colman, Esq., J.P., Aingarth, Loughborough; N. B. Y. Wickham, Esq., Medical Officer of Health, Borough of Loughborough; W. H. Wootton, Esq., J.P., C.C., Chairman, Sanitary Committee, Borough of Loughborough; R. L. Phillips, Esq., F.R.C.V.S., Veterinary Inspector, Loughborough Borough and Rural District; C. Emerson Huston, M.R.C.V.S. *Newcastle-on-Tyne*—Johnstone Wallace, Esq., Lord Mayor; A. N. Oliver, Esq., Town Clerk; Sir H. Newton, Bart., (ex-Mayor), J.P., Chairman of Newcastle-on-Tyne Sanitary Authority; Chas. T. Stableforth, Esq. (ex-Sheriff), J.P., Vice-Chairman of Sanitary Authority; Thomas Parker, Esq., F.R.C.V.S., Chief Veterinary Officer, City and County of Newcastle; Douglas A. Gilchrist, Esq., B.Sc., M.Sc., F.R.S.E., Professor of Agriculture, Armstrong College, Newcastle-on-Tyne. *Rugby*—L. Loverock, Esq., Chairman, Rugby, U.D.C.; W. H. Payne Smith, Esq., M.A.; James Johnson, Esq., J.P., C.C., Thurlaston; W. H. Linnell, Esq., ex-Chairman, U.D.C.; Alfred Over, Esq., M.R.C.V.S., Veterinary Inspector, Rugby Division of Warwick; Captain R. D. Miller, Spring Hill; Henry Rich, Esq.; Partick W. Nicholls, Esq., Ridgway; Charles H. Roche, Esq., Solicitor, Daventry; E. P. Forwood, Esq., Kilsby, near Rugby; Osmond Hastings, Esq., Bilton, Rugby; Francis S. Waller, Esq., Woodcote, Warwick; C. N. Barton, Esq., Rugby; W. R. Nicholls, Esq. (20th Hussars); J. S. Mason, Esq., Market Harborough; W. Hardcastle, Esq., West Hadden; Reginald H. H. Over, Esq., M.R.C.V.S., Rugby; Fredk. Wood Parnell, Esq., Contractor, Rugby.

VETERINARY ASSOCIATIONS: Veterinary Medical Association of Ireland—P. D. Reavy, Esq., President; J. J. O'Connor, Esq., Hon. Sec. National Veterinary Association (Irish Branch)—A. Watson, Esq., President. National Vety. Benevolent Association—W. Augustus Taylor, Esq., President; G. H. Locke, Esq., Secretary. **SOUTH EASTERN VETERINARY ASSOCIATION:** E. Lyne Dixon, President.

MID-CHESHIRE FARMING ASSOC.: T. R. Midwood, Esq. Sir W. Watson Cheyne, F.R.C.S., King's College, Sir W. F. Thisleton-Dyer, late Keeper of Royal Gardens, Kew; Sir Walter Gilbey, Bart.; Sir Gilbert Greenall, Bart.; Sir Alfred Hopkinson, K.C.; Chas. J. Humphrey, Esq., F.R.C.V.S., Veterinary Officer, London County Council; Robert F. Colam, Esq., K.C.; Morton W. Smith, Esq., Standing Counsel to the Royal College of Veterinary Surgeons; George Thatcher, Esq., Standing Solicitor to the Royal College of Veterinary Surgeons; Lt.-General Sir Edward L. Elliot, K.C.B., D.S.O., late Inspector-General of Cavalry in India; Sir Christopher Nixon, Bart., late President, Royal Veterinary College of Ireland; G. de Stackpool, Esq., Mount Hazel, Ballymackwood, Co. Galway; Albert Lowry, Esq., J.P., Oatlands, Navan; Crofton Vandeleur, Esq., Wardenstown, Killeican, Co. Westmeath; Willie T. Potts, Esq., Cor-

reen Castle, Ballinasloe; W. Trumpsevant Potts, Esq., Correen Castle, Ballinasloe; G. Astley Rotherham, Esq., Sallymount, Castle Pollard, Co. Westmeath; Owen Wickham, Esq., J.P., Mullingar, Co. Westmeath; Patrick J. Weymes, Esq., J.P., C.C., Mullingar, Co. Westmeath; Patrick G. Keelan, Esq., M.B., B.A., Mullingar, Co. Westmeath; Thomas F. Rooney, Esq., J.P., Mullingar, Co. Westmeath; Harry C. Stanley, Esq., Coolamber Manor, Co. Longford; Bryan B. Bellew, Esq., M.F.H., Trays Wood, Kilkenny.

Numerous other signatures were obtained, but as they arrived too late to be forwarded to the Treasury, they are not included in this list.

LONDON COUNTY COUNCIL.

County Hall, Spring Gardens, S.W.
April 8th, 1914.

Civil List Pensions.

Sir,—With reference to the circular letter, dated March, 1914, from Mr. Joseph H. Carter, President of the Royal College of Veterinary Surgeons, on the subject of the proposed petition to the Treasury for the grant of pensions from the Civil List to the son and daughter of the late Mr. William Hunting, I am directed to inform you that the Council desires to support the petition. The promoters of the petition are, therefore, at liberty to make use of this information in furthering the object of the petition, but I am to ask that it may be made clear in the letter to be sent to the Treasury, forwarding the petition, that the reason why Mr. Hunting did not on retirement receive a pension from the Council was that he entered the service of the Council as a full-time officer comparatively late in life.

I am, Sir, Your obedient Servant,
(Signed) LAURENCE GOMME,
Clerk of the Council.

Henry Gray, Esq., M.R.C.V.S.,
117, Earl's Court Road, S.W.

The Russian Wolfhound or Borzois.

The "Borzois" is the native wolfhound of Russia, and probably there are a great many people who may be ardent admirers of the breed, who do not realize that his natural vocation is to hunt wolves in Russia, for which purpose he is kept in his own country.

In Russia wolf hunting trials are held similar to the coursing meetings for greyhounds in our own country. These trials are carried out in an enclosed ground surrounded by a high fence, so that there is no possible means for the wolves to escape, and the latter are brought on to the ground in carts somewhat after the style of those used for carting deer in England. After a wolf is let loose, the hounds are slipped in couples, and are judged on their merits in the combined performance of hunting their prey. Practically the chief point of skill in the course is where the two hounds can overtake the wolf and grip him and hold him down while the keeper can come up and take him alive. It is essential for the two dogs to work together, as one could not tackle the wolf alone; so it is no use for one to be faster than the other. In a wolf hunt in open country a clever hound will run up to his quarry and seize him under the ear, and never loose his grip there while the struggle is going on, or the wolf will be able to bite him through the leg. The wolf always runs straight, so that the untrained hound will be inclined to seize him by the hind quarters—a mistake which will be immediately paid for by a severe punishment from the wolf's teeth; but a clever hound will soon learn his lesson on this point. When the hounds have

hunted down their prey, the chasseur dismounts, and gets astride the wolf, and seizes him by the ears, while the hounds are holding on for all they are worth, and another chasseur then slips a muzzle on him, and he is sometimes taken home alive to train the young dogs in killing.

But it is among the more peaceful surroundings that we know and admire the Russian wolfhound, and judge him from his docile and gentle qualifications rather than from the belligerent side.

In 1892 the Duchess of Newcastle founded the Borzois Club, and it is largely due to her keenness and interest in the breed that it holds its prominent position among us to-day, for only eighteen or twenty years ago it was hardly known in England, and now the classes at all the shows are always well filled. Certainly among big dogs the Borzois is entitled to rank as one of the most elegant and symmetrical of canine breeds, combining great strength with these points. As a pet he is very affectionate and devoted, and, although big, is not clumsy. He is also very dignified in his manner, and does not give way to great exuberance of spirits, although at times he is demonstrative. At one time these dogs were always to be seen in the kennels of the Russian nobles, who generally kept to their own special strains in their families for generations, and it has been difficult to buy really good, well-bred dogs; consequently there is the fear that the breed may deteriorate from too much in-breeding.

When buying a puppy, a long head and small ears are points to be looked for. A healthy puppy of three months old should measure about 19 in. to 20 in. at the shoulder. The colour of his coat will not differ very much from that of a full-grown dog. As a rule, the puppies are not easy to rear, for distemper goes hardly with them. They want plenty of room and exercise, and for food a generous diet of new milk, with oatmeal and rice in frequent meals, is the best treatment to keep their digestive organs in good order.

POINTS OF THE BORZOIS.

In shape the true Borzois is like the Scotch deerhound, only more powerful.

The head should be long, with a flat skull, and from the forehead to the tip of the nose so fine that the shape and direction of the principal bones and veins can be seen. The profile is rather Roman nosed. The eyes dark and expressive, almond-shaped, but not too far apart. The head is carried somewhat low, with the neck continuing the line of the back. The ears are like those of a greyhound, small and thin, and placed well back on the head. The chest should be deep and narrow. The feet are like a deerhound, rather long toes, close together, and well arched. The forelegs lean and straight, and, looked at from the front, narrow, but from the side, broad at the shoulders and narrowing gradually to the foot. The coat long and silky, either flat, wavy, or slightly curly, short and smooth on the head, the ears, and front of the legs, a profuse frill on the neck. Colour: Pure white is the rarest; that generally seen is white marked with fawn, lemon or grey. The ears very pretty and dainty, fringed with delicate silky hair, and pricked, with a half fall over like those of a good collie. The tail well feathered and long, but not carried gaily. The carriage of the tail is peculiar in the way it is almost hidden away between the legs, until it curls a little outwards, with a graceful curve at end. The whole appearance of the Borzois is that of an aristocratic and noble animal, judging it from the silkiness and brilliancy of its coat, as well as from the grace and elegance of its movements.—M. F. NALDER in *Farm and Home*.

Women and Veterinary Work.

There was a Whitsuntide Conference of University women at Sheffield, to discuss some professional careers for women, and Mr. J. Share-Jones, M.Sc., F.R.C.V.S., (Lecturer in Veterinary Anatomy and Surgery), dealt with veterinary science as a career for women. There was, he argued, no reason why any branch of the work should be unsuitable for women, as skill rather than strength was required. Besides practical there was administrative work, and there were a number of Government posts, as, for example, in connection with the new Milk Bill. These would increase in the future, when much-needed reforms (*e.g.*, the inspection of meat) were taken up. The number of training centres was small, as the Royal College of Veterinary Surgeons had powers of restriction. He hoped that soon this body would admit women.

To anyone acquainted with the practical work of the veterinary surgeon, as apart from the altruistic theories of College professors, who are usually more theoretical than practical, it would seem that hopes were being raised which are doomed to prove illusory. There is very little veterinary practice in town now, owing to the vast decrease in the number of horses consequent upon the motor-car development, and most city vets. are now reduced to being canine and feline specialists. In the country of course it is different, as there are cows, pigs, sheep, as well as horses to be doctored. But has Mr. Share-Jones any practical knowledge whatever of the life of the average country veterinary surgeon, who is liable to be called out at all hours in all weathers, and have to turn out of bed at two o'clock in the morning, to get on his horse and ride, or drive, through dark lanes in the teeth of a gale of wind and rain to visit an outlying farm, where a cow is *in extremis*, or a horse has got the strangles, or to wade almost knee deep through the mud and mire of a stockyard in order to inspect pigs which may have swine fever?

As regards openings for women for the inspection of milk, that is another matter; but here again these posts will not be kept exclusively for women. The great difficulty about women's employment is that there is a sort of tacit understanding that they shall not be employed for any work after dark. Even in the Post Office the women go off duty at eight o'clock, and any nightwork is undertaken by men. Therefore, it is to be hoped that women looking out for professional careers will not accept Mr. Share-Jones's views as guaranteeing any extensive opening. For instance, within recent years quite a number of girls have gone in for canine nursing as a profession, and veterinary surgeons have earned premiums and fees for permitting them to train in their surgeries; but there is next to no opening for canine nurses, as, in several instances we are personally aware of, a number of educated girls have gone through the course, only to find it utterly impossible to get any sort of employment.—*The Animals' Guardian*.

Sheep-Breeders' Conference.

A conference of sheep-breeders was held last month at Wye Agricultural College, Mr. J. E. Quedstedt presiding. Mr. M. J. R. Dunstan referred to the serious depletion of the sheep population of the country as shown by the recent returns, and urged breeders to be provident, and not mortgage the future for the sake of the present by disposing of too many young animals or of breeding-sheep.

Professor T. W. Cave, of Wye College, in the course of a paper on diseases in sheep, gave details of an investigation into a serious outbreak of bacillary necrosis

in a flock in East Kent, the remarkable feature of which was that the victims were lambs which had contracted the disease prenatally. No evidence had been adduced to show that the dams were similarly affected. On behalf of the College he invited the co-operation of flock masters in further investigation into this most mysterious outbreak.

PARLIAMENTARY.

In the House of Lords, Thursday, July 22.

MILK AND DAIRIES (CONSOLIDATION) BILL.

This Bill passed through Committee.

UNION OF SOUTH AFRICA, VETERINARY DIVISION.

List of Staff in Various Provinces, 1913-14.

Transvaal Province.

J. M. Christy	Senior V.S.	Pretoria
J. G. Bush	Govt. V.S.	Krugersdorp
P. Conacher	"	Johannesburg
J. Chalmers	"	Ermelo
F. J. Dunning	"	Lydenburg
W. G. Evans	"	Volkswest
J. I. Edgar	"	Pietersburg
R. S. Garraway	"	Pretoria
G. Lee	"	Middelburg
G. May	"	Rustenburg
G. McCall	"	Nylstroom
J. M. Tate	"	Potchefstroom
H. M. Webb	"	Carolina
G. C. Webster	"	Barberton
M. Cunningham	"	Pretoria

(To be stationed at Mafeking).

G. F. Marais	Govt. V.S.	Pretoria
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Cape Province.

R. W. Dixon	Senior V.S.	Cape Town
A. Goodall	Govt. V.S.	Cape Town
W. Jowett	"	Cape Town
E. Fern	"	Cape Town
W. G. Pakeman	"	Aliwal North
J. H. L. Lyons	"	Graaff-Reinet
W. Simson	"	Cradock
R. P. Jones	"	East London
J. Nicol	"	Kingwilliamstown
W. P. Hamlyn	"	Komgha
W. Jones	"	Uitenhage
A. Matthew	"	Elliott
A. C. Kirkpatrick	"	Queenstown
T. H. Dale	"	Mossel Bay

Natal Province.

W. M. Power	Senior V.S.	Maritzburg
G. W. Freer	Acting do.	Maritzburg
F. Hutchinson	Govt. V.S.	Dundee
J. L. Webb	"	Bulwer
A. F. Harber	"	Durban
Chas. Tyler	"	Port Shepstone
A. Goulé	"	Maritzburg
F. M. Hill	"	Ladysmith
S. H. Ewing	"	Eshowe
S. I. Johnston	"	Mooi River

Orange Free State.

A. Grist	Senior V.S.	Bloemfontein
J. R. Hamilton	Govt. V.S.	Bloemfontein
J. F. Joyce	"	Ficksburg
C. A. Wadlow	"	Smithfield
E. T. Clemow	"	Frankfort
F. M. Skues	"	Bethlehem

Promotion in R.A.M.C.

In reply to Sir Clement Kinloch-Cooke, Mr. Forster says:—

"It has been decided to promote to the rank of captain all lieutenants of the Special Reserve and Territorial Force, Royal Army Medical Corps, who have given six months' mobilized service, with effect from April 1 last, and steps are now being taken to carry out this decision."

Use of Dogs in War.

The correspondent of the *Morning Post* in Paris sends some interesting particulars of the use of trained dogs in the war. He points out that it was in Belgium that dogs were first systematically trained for active service, just as it was in Flanders that they were most regularly utilised in peace as draught animals. Three years ago there were 150,000 trained dogs in Belgium used for peaceful purposes, and it was a natural enough evolution to train them to draw the machine gun, which requires four men for its transport. In 1911 two Belgian officers made a series of experiments which were so successful that the dog was officially accepted in the Belgian Army. An official report quoted by M. Mégnin in the *Temps* gives the following description of trials made in the manoeuvres of 1913 with dog-drawn machine-guns. "On Aug. 28 the detachment covered twenty miles in suffocating heat. On Aug. 29 the machine-gun company crossed the Meuse in boats . . . and during the crossing of the river the dogs gave no difficulty. The guns were carried ashore by hand, and the dogs trotted up and put themselves in the shafts of their own accord. There was no barking or yelping, and the whole operation was most orderly." The dogs, adds the correspondent referred to, were then tested over fields and difficult, broken ground in service conditions. No natural obstacle could check them, and the gun-carriages and carts that they drew were so narrow that they could pass by the narrowest paths. When in action the dogs would lie down by the guns and await orders without any impatience, and in these circumstances the visibility of the gun teams was reduced to a minimum. Nor was the visibility much greater when crawling close to cover, the dog team and its conductors changed ground under fire, so that in a swift onward leap they could take up new and more effective positions. Often in selecting such positions the commanding officer would crawl ahead to select the ground whence by a whistle they could summon up their canine tractors. The experiment went on for ten days, and at the end, in spite of their strenuous exertions, the dogs were even in better condition than at the beginning.—*Horse and Hound*.

White Cattle of Tuscany.

For many centuries the Val di Chiana (Tuscany) has been celebrated for its white cattle, large in size, docile, and easily managed, capable of enduring a great amount of work, and making excellent beef, as they are very easily fattened. Indeed, it is said that for beef production they are far superior to the Durham and Short-horn breeds, but they cannot be recommended as dairy cattle. In their native country the bulls begin to serve heifers and cows from two years up to four or five years, when they are slaughtered. Heifers are taken to the bull when twenty months old, and are usually bred from until eight to ten years old. Oxen, and heifers as well, are put in yoke when twenty months old, and are fit for work at the age of two years, and, unless injured, stand five years more of hard work, when they are usually stall-fed and slaughtered.

ARMY VETERINARY SERVICE

Extract from *London Gazette*,
WAR OFFICE, WHITEHALL, July 22.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temporary Lieutenants :—
E. J. Burndred, A. W. Brasnett, J. P. Hamilton.
Dated July 5.
R. L. C. Forrest. Dated July 7.
E. B. Reynolds. Dated July 8.
P. Connolly, F.R.C.V.S. Dated July 9.

July 24.

To be tempy Lieuts. :—

R. Stokoe. Dated May 13.
B. B. Loel. Dated May 15.
C. E. Andrew, A. J. Barbeta. Dated May 17.
E. J. Tomlin. Dated May 19.

July 28.

Major A. F. Deacon to be temporary Lieut.-Colonel.
Dated July 29.
Superny. Capt. B. A. Jarvis is restored to establishment. Dated July 15.

July 22.

SPECIAL RESERVE OF OFFICERS.

Supplementary to Regular Units or Corps.

R. H. Stalker to be Lieut. (on prob.) Dated July 8.

July 22.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Appmt. of Lieut. Ll. Crook, announced in *Gazette* of June 21, is cancelled.

MEDITERRANEAN EXP. FORCE. ARMY VET. CORPS.
The following casualty in the New Zealand Contingent is reported :—
DIED—Pte. T. A. Stevens, 188.

Personal.

HARTLEY.—On July 22, at Nithsdale, Swallowbeck, Lincoln, to the wife of Captain C. Hartley, F.R.C.V.S., A.V.C. (T.F.)—a daughter.

A marriage has been arranged between Dr. Victor Greer Best, M.D., youngest son of the late Mr. Francis James Best, J.P., of Cushenhard House, Richhill, Co. Armagh, Ireland, and Miss Maud Augusta Taylor, younger twin daughter of Mr. Wm. Augustus Taylor, F.R.C.V.S., of Manchester, and niece of Mr. and Mrs. Arthur H. Read, of Old Clee, Grimsby.—*The Court Journal*.

Principal J. M'CALL, F.R.C.V.S., Glasgow, and Messrs. James BORTHWICK, M.R.C.V.S., Gateside, Kirkliston, and WILLIAM BROWN, M.R.C.V.S., F.R.P.S., North of Scotland College of Agriculture, Aberdeen, were the Veterinary Inspectors for the Cawdor Cup at the thirty-first annual show of the Edinburgh Agricultural Association held in the Saughton Park, Edinburgh, on Wednesday, 14th inst.

OBITUARY.

HARVEY COLLETT, M.R.C.V.S., West Bromwich.
Graduated, Lond.: April, 1872.

Mr. Collett died on Sunday, 25th July, aged 67.

HAROLD SANDERSON, M.R.C.V.S., Roundhay, Leeds.
Graduated, Lond.: July, 1902.

Death took place on Monday, 27th July. His age was 36 years.

LUPTON.—On July 23, at King Edward VII. Sanatorium, Midhurst, Sussex, Roger Lupton, aged 42, of 34 Halford Road, Richmond, Surrey, second son of the late James Irvine Lupton, F.R.C.V.S., and Eliza Lupton.

CORRESPONDENCE.

"A.V.S.—A CONCESSION."

Sir,—I see your announcement under above heading in your issue of 3rd July.

I consider this an insult to, and a slur on the private practitioner who has been five years running a practice of his own.

Is the civil servant—as experienced in the diagnosis and treatment of general diseases—suffering a greater inconvenience or pecuniary loss? He is the same class of man and surely does not require greater inducement to tempt him to join.

The private practitioner in many cases has completely abandoned his practice, in others his army pay goes to pay his *locum* (if he was lucky enough to get a good one). In all cases his practice is bound to be affected. All must agree that he is more efficient than the man who has had experience of contagious diseases only, probably whose chief work was P.M. on swine fever.

Then after the war :—The civil servant walks back into his appointment. The practitioner has either to build up a new practice, or revive the old one. In either case a dreary and expensive outlook.

The injustice may be due to the fact that the private practitioner has no one to represent him, while the civil servant has.

I should very much like to know if the members of our Council knew anything about this unequal "concession," and what steps they now intend to take to rectify the blunder.

If they are unable to act I would suggest all members who have had a practice going for five years, and joined when they saw their country needed them, to get into touch with each other, and take united action.—Yours, etc.,

7th July, 1915.

"STRAFE."

[The veterinary inspectors of the Board of Agriculture are virtually specialists in the control of contagious diseases, and it is quite thinkable that they may fill well positions for which the general practitioner is not fitted by his ordinary work].

INTERBREEDING OF MULES.

Mule Depot,

Somewhere in England.

Sir,—Will you kindly, through the medium of the next issue of your paper, help us to settle some argument re mule breeding. It is agreed that the ass and the horse are the dam and sire (at least that's our opinion); but the statement "that the mule has no foal by his own species" is the question under dispute; and also, what name is given to the offspring if they do breed, and if not, Why?

Trusting you will favour us with your authentic reply on Saturday.—Yours truly,
July 13th, 1915.

CONSTANT READERS.

[We know of no authenticated report of a foal from mules—sire and dam, although reports of foals from mules occur at intervals. The latest reported in our pages (Aug. 2, 1913), was by Mr. G. J. Harvey, M.R.C.V.S., then at Cyprus, now "somewhere east of Suez." He saw it after foaling; a mare mule, six years, 23.2½ h.h., and says: "The mule was giving milk, and I saw the foal suckling. The foal somewhat resembles a young donkey, but bigger." It is stated that the mare is from a she ass, and the sire of the two foals—a filly the previous year, which died, and the present one, presumably a colt—was a jack.

Are there any records of mating a mule with a mare?]

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaugh-tered. *
	(a)		(a)		(b)		(b)		(b)	(a)	
G. BRITAIN.											
Week ended July 24	10	12			1	1	20	46	1	71	286
Corresponding week in											
1914 ...	6	7			1	45	24	30	1	82	1165
1913 ...	9	10			2	2	32	49	1	56	573
1912 ...	5	13	6	31	5	6	35	77		54	745
Total for 30 weeks, 1915 ...	391	448			30	47	‡515	‡1142	159	2388	12188
Corresponding period in											
1914 ...	480	520	11	74	65	209	1476	2579	150	2517	26605
1913 ...	345	378			102	274	1793	3677	124	1474	19719
1912 ...	529	601	55	321	106	209	2233	4907	165	2027	25991

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, July 27, 1915

† Counties affected, animals attacked: Kent 1,

‡ Figures for seventeen weeks only.

IRELAND.	Week ended July 24	...	...	...	...	...	Outbreaks	2	5	23		
Corresponding Week in {	1914 ...	...	...	...	...	...	1	9	5	22		
	1913 ...	...	...	...	...	...	...	11	4	11		
	1912 ...	...	...	...	3	...	2	...	4	32		
Total for 30 weeks, 1915		...	1	1	...	...	1	3	44	264	159	894
Corresponding period in {	1914 ...	...	1	1	76	957	...	...	54	370	138	709
	1913 ...	...	...	...	...	...	...	...	93	351	97	575
	1912 ...	...	2	2	16	198	...	...	48	262	157	1389

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, July 26, 1915.

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

Veterinary Societies—Addresses.

BORDER COUNTIES V.M.S.

Pres: Mr. H. Barrow, M.R.C.V.S., Ireby, Carlisle
Hon. Sec: Mr. R. Craig Robinson, M.R.C.V.S., Carlisle
Meetings, Second Friday of Feb., June, and October

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Pres. Principal McCall.
Hon. Sec. Mr. J. D. Fulton, 83 Buccleuch Street, Glasgow

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Hon. Sec: Mr. B. Gorton, M.R.C.V.S. Assist. Mr. P. R. Turner

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Hon. Sec. & Treas. Mr. A. M. Trotter, M.R.C.V.S.,
Moore Street, Abattoir, Glasgow

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Hon. Sec: Mr. Trevor Spencer, M.R.C.V.S., Kettering

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Quay-street, Manchester

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Hon. Sec. & Treas: Mr. W. Shipley, F.R.C.V.S.,
South Town, Great Yarmouth

COLONIAL SOCIETIES (continued next page)

VETERINARY ASSOCIATION OF NEW SOUTH WALES.

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V. Pres: Maj. A. P. Gribben, F.V.O., M.R.C.V.S.
Hon. Sec. & Treas: Mr. Max. Henry, M.R.C.V.S., B.V.Sc. (Syd).
56 Bridge Street, Sydney

BRITISH COLUMBIA V.M.A.

Pres: Dr. Gibbons, M.R.C.V.S., Vancouver,
Hon. Pres: Dr. Hamilton, M.R.C.V.S., Victoria.
Sec., Treas., Registrar. Dr. T. Jagger, V.S., Vancouver.

ASSOCIATION MÉDICALE VÉTÉRINAIRE FRANÇAISE "LAVAL"
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Hon. Sec. Mr. C. H. H. Sweetapple,
For Saskatchewan, Alta.

ONTARIO V.A.

Pres: Mr. J. H. Tennent, v.s., London, Ontario
Sec. & Treas: Mr. L. A. Wilson, Toronto, Ontario

TRANSVAAL V.M.A.

Pres: Mr. C. E. Gray, F.V.S., Box 134, Pretoria.
Hon. Sec: Mr. P. Conacher, g.v.s., Box 877, Johannesburg

NATIONAL VETERINARY ASSOCIATION

President: Dr. O. Charnock Bradley, Prin. R.V. Coll., Edin.
Sec: Mr. J. W. Brittlebank, M.R.C.V.S.,

Town Hall, Manchester

Assist. Sec: Mr. W. L. Harrison, F.R.C.V.S.,
 11 Anchor Terrace, Southwark Bridge, S.E.

Treas: Prof. G. H. Wooldridge, F.R.C.V.S.,
 Ryl. Vet. Coll., Camden Town N.W.

Northern Branch:

Pres. W. A. Taylor, (F) Brick Street, Manchester
Hon. Sec. A. W. Noël Pillers, (F)

71 Smithdown Lane, Liverpool
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Pres: Mr. G. H. Locke, M.R.C.V.S.,
 Grosvenor-street, Manchester

Hon. Sec. Mr. J. W. Brittlebank, M.R.C.V.S.,
 Town Hall, Manchester

Hon. Treas: Mr. E. H. Stent, M.R.C.V.S., Preston-st, Hulme
Meetings, 1st Thursday in April, June, Sept., & Dec.

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Pres: Mr. J. P. Heyes, F.R.C.V.S., Wigan
Hon. Sec: Mr. A. Walker, M.R.C.V.S., Mill Lane, West Derby

Pathological Sec: Mr. D. C. Matheson, F.R.C.V.S.
Meetings, May, July, October, January.

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Pres: Mr. J. Malcolm, F.R.C.V.S., Birmingham

Hon. Sec: Mr. H. J. Dawes, F.R.C.V.S.,
 Camden House, High-st., West Bromwich

Hon. Treas. Mr. J. J. Burchnall, M.R.C.V.S., Barrow-on-Soar
Meetings, Second Tuesday, Wednesday, Thursday, and
 Friday alternately in Feb., May, Aug. and Nov

NORTH OF ENGLAND V.M.A.

Pres:
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Meetings, Third Friday, Feb., May, Aug. and Nov.

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Hon. Sec: Mr. J. S. Lloyd, F.R.C.V.S., Sheffield

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Hon. Sec: Mr. L. W. Wynn Lloyd, M.R.C.V.S., Carnarvon
Meetings, First Tuesday, March and September

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Meetings, First Friday, Mar., June, Sept. and Dec.

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Sec. T. C. Toope, 84 High Street, Dover

CENTRAL V.S.

Pres. Mr. F. W. Willett, M.R.C.V.S., High Street, Staines

Hon. Sec: Mr. H. A. MacCormack, M.R.C.V.S.,
 122 St. George's Avenue, Tufnell Park, N.

Meetings, First Thursday in each month, except August
 and September, 10 Red Lion Square, Holborn, at 7 p.m

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Pres. Mr. T. E. Barcham, M.R.C.V.S., Paston, Norfolk

Hon. Sec. & Treas: Mr. A. C. Holl, M.R.C.V.S.

Meetings, Second Tuesday, Feb., July and Sept.

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Long Stanton, Cambridge

Hon. Sec. & Treas: Mr. Tom Hicks, M.R.C.V.S.,

Boston Road, Sleaford

Meetings, Second Thursday Feb., June, and October

ROYAL COUNTIES V.M.A.

Pres: Mr. J. C. Coleman, M.R.C.V.S., Swindon

Hon. Sec. & Treas: Mr. G. P. Male, M.R.C.V.S., Reading

Meetings, Last Friday, Jan., April, July and Nov.

SOUTHERN COUNTIES V.S.

Pres: Mr. G. H. Livesey, M.R.C.V.S., Hove, Sussex

Hon. Sec: Mr. A. H. Archer, M.R.C.V.S., Southsea, Portsmouth

Hon. Treas: Mr. E. W. Baker, M.R.C.V.S., Wimborne

Meetings, Last Thursday, Mar., June and Sept.

SOUTH EASTERN V.A.

Pres. Mr. E. Lyne Dixon, M.R.C.V.S., Margate

Hon. Sec. & Treas. Mr. Theo. C. Toope, M.R.C.V.S.,

34 High Street, Dover

Meeting,

WESTERN COUNTIES V.M.A.

Pres: Mr. W. Roach, M.R.C.V.S., York Road, Exeter

Hon. Sec. Mr. W. Ascott, M.R.C.V.S., Bideford

Hon. Treas: Mr. P. G. Bond, M.R.C.V.S., Plymouth

Meetings, Third Thursday, March, July and November

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Sec. Mr. P. D. Reavy, Leafield, Bundoran, Co. Donegal

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Hon. Treas: Prof. J. F. Craig, M.A., M.R.C.V.S.,

R.V. Coll., Dublin

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Hon. Sec: Mr. J. A. Jordan, M.R.C.V.S., Belfast

Hon. Treas: Mr. H. McConnell, M.R.C.V.S., Armagh

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Pres. Dr. O. Charnock Bradley, } Ryl. (Dick) Vet.
Hon. Sec. Prof. A. Gofton, } Coll: Edinburgh

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Pres: Mr. W. Marshall, M.R.C.V.S., Aberdeen

Hon. Sec. & Treas: Mr. G. Howie, M.R.C.V.S., Alford, Aberdeen

Meetings, Last Saturday in January and August

ROYAL SCOTTISH V.S.

Pres: Mr. Reid, M.R.C.V.S., Auchtermuchty.

SCOTTISH METROPOLITAN V.M.S.

Pres: Mr. J. Riddoch, M.R.C.V.S., Edinburgh

Hon. Sec. & Treas: Mr. Jas. Henderson, M.R.C.V.S.,

Public Health Dept., City Chambers, Edinburgh

WEST OF SCOTLAND V.M.A.

Pres: Prof. John R. McCall, M.R.C.V.S., Vety. Coll. Glasgow

Hon. Sec: Mr. J. F. Macintyre, M.R.C.V.S.,

19 Bank Street, Hillhead, Glasgow

Hon. Treas: Mr. Geo. W. Weir, M.R.C.V.S.,

88 Crookston Street, Glasgow

Meetings, Second Wednesday, May, Oct. and January.

COLONIAL SOCIETIES: (see preceding page)**CAPE OF GOOD HOPE V.M.S.**

Pres. Mr. J. D. Borthwick, M.R.C.V.S., Cape Town

Hon. Sec. & Treas. Mr. J. W. Crowhurst, F.R.C.V.S.

Longmarket Street, Cape Town

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Pres. Mr. Geo. Hilton

Hon. Sec: Mr. A. E. James, Ottawa

VET. ASSN. OF MANITOBA.

Pres: Dr. W. R. Taylor, Portage la Prairie

Hon. Sec. & Treas: Mr. Wm. Hilton, Winnipeg

NATAL VETERINARY MEDICAL ASSOCIATION.

Pres. Mr. F. J. Carless, M.R.C.V.S., Mooi River

Hon. Sec. & Treas. Mr. A. Gould, Eshowe, Zululand

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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VOL. XXVIII.

H.A.S. LICENTIATES : EXISTING PRACTITIONERS.

Thirty years ago, the members of the R.C.V.S. were much fewer than to-day ; while the number of legally recognised veterinary practitioners outside the R.C.V.S. was quite large. We have augmented in numbers since then ; while the others, not being recruitable, have dwindled to within measurable distance of disappearance.

The old Licentiates of the Highland and Agricultural Society, though not recognised by Charter as professional men, were really quite equal in training and examination to our own members—a fact which the R.C.V.S. finally recognised by admitting them within our ranks without examination. Prior to that, many who obtained the H.A.S. licence also passed our examinations ; and a good number of our members to-day—including some of our best men—are also licentiates of the H.A.S. Some, however, did not enter the R.C.V.S., but were content to practise with the licence alone. The number of these is now very small ; and their effective total must be still smaller. Only 78 appear in the current Register ; and the licences of exactly two-thirds of these date back fifty years or more—some much more—while the most recent licence is dated 1876. Many of these men must be no longer in practice ; and it cannot be many years before the number still practising on the H.A.S. licence alone will be practically *nil*.

The "Registered Existing Practitioners" are also fast disappearing. In the Register of 1908—the first that was fully prepared by our present Registrar—there were 319 names of Existing Practitioners. In this year's Register there are only 178. This big fall in seven years shows what we may expect. Registered men were only required to produce evidence of having been in practice from 1876 ; and, therefore, not all of them are necessarily old men. It is quite conceivable that a few of them may be still living two or even three decades hence. But, in less than one decade, so few of them will be left in active practice that their collective opposition will be negligible.

Middle-aged members will remember that the opposition of registered men was once very serious indeed. At one time there were roughly about two of them to five of us upon the Register ; and, as most of them were in England and Wales, their proportion there was higher. But the days are coming in which members of the R.C.V.S. will have no opposition except that which is absolutely unqualified and unlicensed—and one of our most pressing problems is how best to deal with that.

RUPTURE OF THE STOMACH.

By W. R. DAVIS, M.R.C.V.S.

A cart mare, four years old, had a sinuous wound in the left abdominal wall midway between the last rib and the stifle. Pus was constantly dropping from the wound, and the owner, who had bought the mare as a two-year-old, asked me to examine her and see if a cure could be effected. I cast the mare, and on introducing a probe found that there appeared to be two directions in which it would pass. One went apparently directly into the abdominal cavity ; the other followed a course that ran deeply in the abdominal wall towards the ribs. The owner was not very keen to have the sinus traced by incision, as the patient did not appear to suffer any inconvenience from the wound, and he had heard that it was present when the mare was foaled ; and I did not press to cut to the bottom of track under these conditions, but contented myself with having the sinus syringed out with diluted Burnett's Fluid.

After my examination the mare worked for a year and was in excellent condition, but pus still kept discharging from the orifice in the abdominal wall.

Two months ago the mare had an attack of catarrhal fever and was laid off for a week. When she had recovered, and before she was put to work, I was called to attend her for a rather severe attack of constipation and colic, which I attributed to too liberal feeding with tares. Ten days after this she had another attack of colic which lasted all day. On recovery she was put to work.

On Sunday morning, July 25th, I was again called to the mare, and found her the subject of a severe attack of abdominal pain. A draught containing turpentine and oil of peppermint had been given before my arrival. The pain was not extremely acute, though the patient could not be kept on her feet. When she was down she would lie sometimes on the side, sometimes on the breast, and occasionally would roll partly over and remain on the back for a quarter of an hour at a time. Flatus was passed and eructations were not infrequent ; some soft faeces were passed. On rectal examination, though no faeces were reached, the intestines appeared to be normal. I came to the conclusion that the pain ought to be referred to the stomach, and that it was a case of overloading and gastric tympany.

The treatment consisted of enemas, and of draughts containing ammon. carb., ether, oil of peppermint, carbolic acid, and a physic ball. I left the mare at night, and on going early the next morning found her making attempts to vomit and

to be in a dying condition; she died half an hour after my arrival.

Post-mortem. On opening the abdomen a large quantity of greenish fluid escaped, and below the stomach, which showed a large rent in its villous portion, was a tightly compacted mass of stomach contents free in the abdomen. Attached to the wall of the colon and to the abdominal parietes opposite the opening of the sinus I found a thick band of tissue, gelatinous externally and condensed within. Where this joined the abdomen the peritoneum was thickened, and for a hand's breadth anteriorly the subjacent tissues were also greatly thickened, and on slitting this up, following a probe introduced from the outside, a piece of twisted wire two inches long was discovered. It is evident that the wire had been swallowed, and after piercing the bowel had made its way into the abdominal wall and travelled in its thickness in a forward direction towards the ribs.

The adhesion of the bowel to the abdominal parietes was doubtless the means of setting up digestive troubles, to which may be attributed the previous colics, and the final gastric tympany and rupture.

ABSTRACTS FROM FOREIGN JOURNALS.

THE ACTION OF ARSENICAL DIPS IN PREVENTING TICK INFESTATION.

H. W. Graybill has published (*Journal of Parasitology*, 1914, Sept., Vol. I, No. 1, pp. 48-49) an article upon this subject. A previous paper by the author upon the same subject was published by the Bureau of Animal Industry in 1913, and the results obtained by the experiments recorded in that paper showed that cattle dipped in an arsenical dip are protected from becoming infested with ticks for two days, but not for five.

The experiments referred to in the present communication were carried out with the object of ascertaining whether such dipping confers any protection for three or four days, and whether any mortality occurs among ticks placed upon or maturing upon immune animals that have been dipped on a number of occasions at intervals of one or two weeks.

The dip used contained eight pounds of white arsenic to 500 gallons, but no pine tar was mixed with it.

In the first experiments non-immune calves had placed upon them seed ticks at intervals of three and four days after dipping, other similar calves being left as controls. It was found that while the animals were not absolutely protected from the ticks the infestation in the dipped animals was lighter than in the controls, and, in view of the fact that no dead nymphs were found, it would appear that the lighter infestation was due to an action of the dip upon the larvæ.

The second experiment was primarily intended to show whether ticks that have matured on animals that have been regularly dipped show any mortality after dropping off.

Immune calves were divided into three groups. One group was dipped four times at intervals of two weeks, a second group was dipped four times at intervals of one week, and the third batch were left as controls. The ticks were applied five days after the last dipping. The results showed that the dipping does not prevent infestation entirely, but that it reduces it to some extent when the animals are dipped at intervals of a week. The ticks collected showed no abnormality in connection with oviposition and the number of eggs hatching, and the mortality was normal.—(*Tropical Veterinary Bulletin*.)

THREE CASES OF EQUINE ALOPECIA.

Fayet and Tortique, two army veterinary surgeons, have recorded (*Revue Vét. de Toulouse*) the following three cases.

In two of these cases, the appearance of alopecia followed upon the application of the actual cautery. The first case was a very nervous thoroughbred horse, eight years old. Eight days after firing, hairless patches appeared on the chest wall of this animal, without any perceptible irritation.

The second case was an eight-year-old thoroughbred; and, as in the first case, the loss of hair appeared eight days after firing. In this case the hair was lost over almost the whole of the body. The authors attribute both these cases to vasomotor disturbances.

The third case was as follows. In a half-bred mare, five years old, an almost total alopecia appeared without any assignable cause. At first, hairless places the size of the palm of the hand, many of which were beset with small fissures and were slightly moist, appeared at different parts of the body. After about three months the mare had become almost completely bare, like a Chinese dog. At this time a slight œdema appeared on the under surface of the thorax and abdomen; but this soon disappeared. Microscopic examinations of the dung and blood were made; but no parasitic cause of the disease could be demonstrated. The hairs soon grew again.—(*Berliner Tier. Woch.*)

W. R. C.

THE CENTRAL VETERINARY SOCIETY.

[NATIONAL V.M.A. SOUTHERN BRANCH.]

The concluding meeting of the session was held at 10 Red Lion Square, on Thursday, July 1st, Mr. F. W. Willett (President) in the chair. The following Fellows signed the attendance book:—Messrs. G. H. Livesey, R. Eaglesham, Sydney H. Slocock, J. Willett, R. J. Foreman, J. F. Macdonald, G. S. Heatley, B. Gorton, J. Rowe, E. L. Stroud, N. Almond, G. Upton, W. R. Davis, H. D. Jones, Prof. J. Macqueen, and Hugh A. MacCormack (Hon. Sec.).

On the motion of Mr. J. Willett, seconded by Mr. R. J. Foreman, the minutes of the last meeting were taken as read, and confirmed.

Correspondence. Letters were received from Prof. Reynolds and Mr. J. W. McIntosh, regretting inability to be present.

The SECRETARY reported that Mr. Bennett had joined His Majesty's forces, and was unable to attend the meeting. He also read a letter from Major J. J. Griffiths, resigning his membership of the Society.

On the motion of Prof. Macqueen, the resignation was accepted with regret.

The PRESIDENT stated that since the last meeting one of the fellows, Lieut. J. W. Brownless, had been killed in the Dardanelles. He moved a vote of sympathy with Lieut. Brownless' relatives.

The motion was carried by the members standing.

SPECIMENS.

Mr. EAGLESHAM showed a fractured pedal bone of an aged London vanner. The animal had been laid up for four or five months with meningitis, attacks of which it was subject to. On being brought out one day into a paved yard for examination, it was seized with one of these brain attacks, becoming violent, convulsive, and throwing itself down violently in the yard; on rising it was found to be very lame in the off fore leg, and scarcely able to mark the ground with the foot. A fracture was suspected within the foot, and as the animal was useless from the brain disease it was destroyed. The post-mortem examination showed fracture of the pedal bone, the bone being almost fractured through the centre, the result of violence probably when the horse was struggling.

Mr. LIVESY exhibited the rectum of a mongrel fox terrier. The dog, it was said, had been suffering for five months from constipation with impacted faeces, but on seeing him he was not satisfied that it was a case of constipation at all. When the animal tried to defecate he would squat down and strain, with his head in the air and his mouth wide open. On examination the forefinger could not be got inside the anus, which was hard and contracted, and appeared to be the seat of adenoma. A catheter could not be passed more than two inches. There were enlarged glands in the abdomen.

The dog was destroyed, and on post-mortem the rectum was found to be contracted, with the wall hard and invaded from the outside by some new growth having the appearance of tubercle. There were growths, partly fat and partly hard globules in the omentum, the kidney, the liver, and on the peritoneal wall of the abdomen. It would seem that the dog felt an obstruction and had a feeling of fulness which caused him constantly to wish to defecate. He did not know the nature of the growths. The prostate gland was enlarged, but not sufficiently to cause trouble.

Mr. MACDONALD mentioned a case similar to that of Mr. Eaglesham. The animal made a false step when working in the street and fell lame in a hind foot. There was pain in front of the frog, and in a day or two pus formed. The case did not yield to treatment and a ringbone formed. He was blistered, and went to work again after a few months rest, and worked quite well except that he was rather inclined to go on his heel. About six months later he dropped dead in the street from ruptured heart. On post-mortem a fracture was found affecting the articular surface, but the bone had not divided; it was more of a bad crack.

Mr. ALMOND brought forward a case of a six-year-old fox terrier dog which had developed a habit at intermittent periods of snapping at imaginary flies. There did not appear to be any irritation of the eyes or ears, and the dog seemed quite healthy.

Mr. SLOCOCK remembered that he had recently had a case of tetanus in a pig, and within a week his assistant, Mr. A. A. Higgins, saw another case. The symptoms were most pronounced. The two cases occurred within three miles of each other.

Mr. FOREMAN said he had had a case of a dog snapping in connection with epileptic fits. The dog would bolt away for hours at a time, and come back in a very dragged condition. He castrated the animal and stopped the running away, but he did not know whether it stopped the snapping. He had a number of cases of

snapping as if at flies, but on enquiry turned out to be habit.

Mr. ALMOND said that in his case there were no signs of epilepsy.

Prof. MACQUEEN said he knew of no case of tetanus in the pig.

The PRESIDENT said he had seen one or two cases in the pig years ago which he thought was tetanus, but was not sure.

Mr. SLOCOCK said both the pigs had been recently castrated, but not by the same man. There were castration wounds.

COMPUSORY PUPILAGE.

The PRESIDENT read the circular letter from the Eastern Counties V.M.A., enclosing the following resolution:—

"That in view of the great scarcity of veterinary surgeons the time has arrived to encourage the graduation of practical men, and that this can be only obtained by the compulsory pupilage of students for at least twelve months with a qualified veterinary surgeon prior to being admitted as a student at any of the Veterinary Colleges."

He said his own view was that the present was not the time to discuss the subject. Very few of the practitioners could be troubled with pupils just now.

Mr. UPTON said the profession was in a very critical condition, and people in his district were going to quack men or self-taught men. He was well acquainted with country practice, and was bound to say that a young man who buried himself in a country district with a certificate was a fool. He knew seven or eight places in his own district where qualified men were giving up practice. The veterinary profession appeared to him to be breaking up. The Colleges were fostering the spirit of training men for official work; the Colleges would have to train men for officialism, and the practitioners train them for general practice. Unqualified practitioners were holding the field both in dentistry and veterinary surgery, and it was for the general practitioner to work out his own salvation, because the Colleges seemed to be working for the destruction of the profession. He had been told by an old practitioner that it was no use entering the honourable ranks of the veterinary surgeon unless a man was 18 carat.

Mr. SLOCOCK said there was as good a chance of a veterinary surgeon getting a living honestly and well to-day as ever there had been. The Colleges were turning out veterinary surgeons as good as ever were turned out. The veterinary profession were showing that they had amongst their numbers men who were doing good work in helping the country as it should be helped in its present need. In his opinion this was not the time for the question of pupilage to be brought forward at all. The useful lad of more than school age could devote his time for a year or two to come in preparing some of the necessities of war, a war that weighed heavily on the minds of all right thinking people. When the days of peace came then the Society might give some consideration to the question of whether a man should devote a year or two as a pupil to a veterinary surgeon.

Mr. LIVESY supported the suggestion that the matter was not one for discussion at the present time. No doubt every man wished for some practical knowledge, which could only be obtained in daily practice, and not in a lecture room; but the subject might be discussed when peace was declared, and he thought the reply to the Eastern Counties Association should be to the effect that the Central Veterinary Society was quite favourable to the idea of increased pupilage, but did not think the time of war was one for the subject to be proceeded with; he moved that as a resolution.

Mr. MACCORMACK seconded the motion.

Mr. ALMOND supported it. He thought it was evident that there were not enough students to-day, and compulsory pupilage instituted at the present time would add additional hindrance to the access of students.

Mr. LIVESY said the question would open up a vast field of discussion. It would have to be a recommendation to the Royal College, which would have to pass a By-law, and the College could not recommend compulsory pupilage unless it could recommend suitable men with whom the pupilage could be passed, and that would involve a national register of competent veterinary surgeons. Many men entered College when of mature years, and it would be difficult to say that they should spend one or two years of pupilage before entering.

Mr. HEATLEY thought it was desirable for a young man entering the profession to know something about the animals with which he had to deal. He remembered a man in Edinburgh, who came from London, who had never had a horse or cow or pig under his observation in his life, and it was a source of annoyance to him that he could not acquire the practical information which other men had received on farms. He did not know that it would do harm to the profession if men before joining had some practical experience. He quite agreed, however, that the time was not ripe for discussing the matter.

Prof. MACQUEEN pointed out that on the agenda it was distinctly stated that the subject was to be discussed, and a resolution that it should not be discussed was out of order.

Mr. SLOCOCK asked whether the Fellows were discussing the letter or compulsory pupilage?

The CHAIRMAN said the letter.

Mr. SLOCOCK said in that case he contended the proposed reply was the fitting one.

Mr. URTON said somebody had to do the rough country work and men had to be trained to do it. It was not worth a man qualifying to earn £2 or £2 10s. a week.

Prof. MACQUEEN had no desire to prolong a discussion on the subject if it was not agreeable to the Fellows. It had been said that the present was not an opportune time to discuss the matter, but in his view it was the most opportune time, because there was little or nothing else before the profession. If it was the opinion of the majority of the profession that there should be compulsory pupilage, now was the time to set the ball rolling and for the Societies to discuss the best way of carrying out the views of those who maintained that compulsory pupilage was good for the profession. He offered no opinion with regard to compulsory pupilage at the moment, but certainly thought there was no objection to its discussion. At the Eastern Counties meeting when the letter was issued he understood it was agreed that the compulsory pupilage sought by the promoters was to cover the intervals between the sessions at College, so that students instead of wasting their time doing nothing for a period of three months each year might use that time under the supervision of qualified practitioners. What was the objection to that sort of compulsory pupilage? At the present time it was adopted voluntarily by many students, and there was not the slightest doubt that if it were compulsory it would be distinctly advantageous. It would also lead to benefit to practitioners. Whoever had charge of the scheme would have to initiate some method of standardising the capabilities of practitioners who might be selected to supervise the tuition of pupils, and those who accepted the responsibility of taking charge of pupils would have to show that their practice was of such a character and extent as to justify their appointment in that capacity.

Mr. J. WILLETT was sure the Fellows agreed with Professor Macqueen in regard to the student going with a veterinary surgeon in the interim between his College sessions, but he personally did not agree with Prof. Macqueen when he said that that was what was meant, for the resolution sent by the Eastern Counties' Society distinctly spoke of the student being for at least twelve months with a qualified veterinary surgeon prior to being admitted as a student. Considering the great scarcity of students presenting themselves now, that would certainly create another difficulty and tend further to lessen the number of students applying for admission to the Colleges.

Mr. SLOCOCK was not opposed to a student serving some of his time with a practitioner, as it was scarcely possible to imagine how he could get practical knowledge otherwise. He had served as a pupil himself and found it of great advantage. All he contended was that the present was not the time to discuss the matter. There were arguments for and against, and he believed the arguments for would very much outweigh the arguments against. He believed it was far the best way for the student to put in his time between College terms. To make a successful veterinary surgeon a boy should be kept at school until he was seventeen and have a good educational grounding before starting his professional training, and he could pick up a tremendous amount of knowledge with a good practitioner during the vacations.

Mr. J. WILLETT agreed that a man after leaving College should go with a qualified practitioner and not waste his time.

Prof. MACQUEEN said the point before the meeting was the resolution proposed by Mr. Livesey and seconded by Mr. MacCormack, and if there was no amendment that should be put to the meeting.

Mr. J. WILLETT proposed as an amendment, "That the Society is thoroughly in agreement that a student should be bound to go with a qualified practitioner during the interim of his College course, but that owing to the paucity of students at present it would be a grave deterrent to men entering the profession if they were compulsorily bound to become pupils for at least twelve months prior to entering College."

Mr. ALMOND seconded the amendment.

Mr. DAVIS did not think the Society ought to be committed to the opinion that compulsory pupilage should be enforced on students without a discussion of the subject.

Prof. MACQUEEN said the resolution stopped discussion.

Mr. DAVIS said it was only the expression of a pious opinion.

Mr. ROWE was quite in favour of pupilage although he believed the time of war was not the time to discuss it.

Prof. MACQUEEN moved a second amendment: "That the letter from the Eastern Counties Veterinary Medical Association be acknowledged, and that the Association be informed that at present, owing to the lateness of the session, it is impossible to discuss the question of compulsory pupilage."

Mr. DAVIS seconded the amendment, which on being put was carried with two dissentients. On being put as a substantive proposition it was carried *nem. con.*

Prof. MACQUEEN said the resolution and the first amendment committed the Society to a policy to which the majority of members might not agree. Unless there was a proper discussion it would be a distinct mistake to send an answer to the Eastern Counties that the Society objected to compulsory pupilage. As a matter of fact the members only objected to a certain form, and until the Society had thoroughly discussed the question

he thought no other answer should be given than that expressed in the second amendment.

The PRESIDENT said he quite agreed.

Finance.—On the proposition of Mr. J. WILLETT, seconded by Mr. SLOCOCK, it was agreed to invest certain funds of the Society in the War Loan.

Mr. UPRON mentioned the fact that recently he had had a case of fatal poisoning in a horse due to eating the leaves of a yew tree on the side where the tree had been cut. On the side where the tree had not been cut the eating of the leaves had not affected him.

On the Agenda was an item for an impromptu discussion, but the hour being late and the meeting the last of the Session it was agreed that the item should be deleted.

On the motion of Mr. SLOCOCK, seconded by Mr. FOREMAN, a vote of thanks was accorded to the President for his conduct in the Chair during the Session.

The PRESIDENT briefly returned thanks. He believed the meetings during the Session had been pleasurable, profitable and instructive, and he hoped his successor would have as good a time as he had had.

On the motion of Mr. JONES, seconded by Mr. FOREMAN, a vote of thanks was accorded to the exhibitors of morbid specimens.

The Session then closed.

HUGH A. MACCORMACK, Hon. Secretary.

NORTH MIDLAND VETERINARY MEDICAL ASSOCIATION.

[NATIONAL V.M.A.—NORTHERN BRANCH.]

The Quarterly Meeting was held at the Grand Hotel, Sheffield, on Tuesday, July 20th, 1915. *Present*—Messrs. M. Robinson (President), J. S. Lloyd (Hon. Sec.), G. Green, C. Secker Smith, A. D. Morgan, G. J. Furness, W. Murgatroyd, T. C. Fletcher, R. Hudson, and S. E. Sampson.

Visitor—Hugh Begg, Esq., F.R.C.V.S., Chief Veterinary Inspector for the County of Lanarkshire.

Apologies had been received from several members unable to attend.

The minutes of the last Quarterly meeting (already published in the Veterinary press and taken as read) were confirmed on the proposition of Mr. Furness, seconded by Mr. Green.

The report of the Council meeting held on June 22nd, 1915, was adopted on the proposition of Mr. Hudson, seconded by Mr. Smith. The following is an extract from the report of the Council meeting:—"The Hon. Secretary informed the Council that he had received an application for assistance in carrying on his practice from one of the members, Mr. B. P. Boyle, of Belper, who had joined the Army Veterinary Corps, and that he had received promises from the undermentioned gentlemen to take over temporarily Mr. Boyle's clients near to their own practices: Messrs. Robert Cockburn, Eastwood, Notts; Harry Fairer, Derby; G. J. Furness, Alfreton; A. B. Howe, Wirksworth, and Alex. Levie, Derby. The terms agreed upon were for each gentleman to make his own charges and to hand over 20 per cent. of the receipts to Mr. Boyle.

The PRESIDENT moved, and Mr. GREEN seconded, that a vote of thanks be given to Messrs. Cockburn, Fairer, Furness, Howe and Levie for offering to take Mr. Boyle's practice during his absence, and that the Honorary Secretary be instructed to write each of them conveying the feeling of the meeting. (Carried.)

The HON. SECRETARY read a letter from Mr. Gray thanking the Association for their subscription to the Hunting Memorial Fund, and saying that they hoped to raise £500 by July 1st.

The Hon. Secretary also said that he had had further correspondence with Mr. Slocock with regard to the Veterinary Benevolent Fund and the Victoria Benevolent Fund. He understood that efforts are being made with a view to the two funds being worked in conjunction, or, if possible, amalgamated.

ECZEMA IN THE DOG,

By G. GREEN, M.R.C.V.S.

Mr. President and Gentlemen,—The reason I have chosen this subject for my short paper this evening is because all practitioners engaged in canine practice know that perhaps the most common condition in our canine friends that they are called upon to treat, is that of eczema.

And whilst, being most common, is at the same time, I venture to think, one of the most obstinate, annoying and least amenable to treatment of all diseases in the dog. It is not my intention to-night to go into an elaborate or minute description of the pathology of eczema in its different phases, or to promulgate some new theory as to its origin or cause, but rather to confine myself to a few remarks on the subject which, I trust, may lead to a practical, profitable and useful discussion which may be of some assistance to those engaged in canine practice.

Definition. Eczema is a non-contagious inflammatory disease of the skin, indicated by redness, formation of nodules, vesicles, pustules, scabs and fissures, and accompanied by intense irritation.

It affects all breeds of dogs and may be a localised condition or extend over a greater part of the body. It occurs more in warm weather than in cold or, in other words, more in summer than in winter.

Etiology. The causes of eczema are various and are of great importance, as a knowledge of the cause guides one in its treatment and has a considerable bearing on the results. For the purposes of this paper, I divide them into external and internal.

External Causes. May be due to any mechanical irritation as produced by agents such as dirty collars, too small kennels, damp and dirty beds; in fact anything which lends itself to general want of sanitation and cleanliness. Again, irritation due to parasites, as fleas, lice, ticks, etc., the animal in these cases inflicting upon its own skin injuries the results of which are most pernicious. Then there are injuries caused by the very much advertised quack remedies, containing irritants, such as preparations of tar, turpentine, etc., irritant dog soaps of the same family, many of which are very injurious to a delicate structure like the skin.

Internal Causes. Due to internal conditions connected with the blood, nervous or alimentary systems. The conditions may be and often are produced by insufficient exercise, injudicious feeding (these particularly applying to idle, pampered dogs of plethoric dispositions). A too stimulating diet, as for example, too much cooked meat. Constipation of the bowels, sluggish condition of the liver, and the presence of parasites or the formation of toxins in the alimentary canal—in fact, any condition which alters the character of the blood or its circulation. Nervous causes may be due to some condition operating in the intestines and thus acting on the peripheral ends of the nerves under the skin.

I propose to divide my subject into two forms—acute moist eczema and chronic eczema. There are other forms which receive special names, but are probably only stages in one or other of the two I have named.

ACUTE MOIST ECZEMA.

This occurs in all dogs, particularly long-haired dogs, and may be periodic. It affects chiefly the back, shoulders, neck and thighs, but may be found on other parts. It often commences as a small circumscribed patch which, however, may extend until a large area is involved. Your attention is first drawn to it by the animal licking the part, and on examination you will find a redness or hyperemia of the skin, associated with intense irritation. In a short time nodules appear, followed by the formation of crops of small vesicles, the hair stands up, the skin becomes hot, and shortly the vesicles burst and discharge their glairy contents into the surface, the hair falls off and a bright red patch is left, very tender and painful to the touch. The discharges dry, and, where the animal can be prevented from scratching or licking it, crusts or scabs are formed.

Where resolution and recovery takes place, the scabs fall off, leaving a bald patch which rapidly becomes covered with hair. In cases, however, where patients have been allowed to gnaw or injure the parts, laceration and permanent disfigurement is often the result, a bald patch being left as a lasting eyesore.

CHRONIC ECZEMA.

Is very troublesome and often of long duration. It is, however, not associated with the same degree of irritation or of constitutional disturbance as in the acute form, but is usually more extensive in its ravages. It is, I think, more common in short-haired dogs, but, of course, not confined to them. Usually commencing on the back, often near the root of the tail, it extends even to the neck and upper part of the legs.

In the early stages, nodules form and are followed by the formation of pustules and scabs, the skin becomes thickened and, in advanced cases, corrugated, the hair falls off and the whole of the affected part takes on an unhealthy blue or slaty appearance. The skin is irritable and raw, bleeding surfaces are often present as the result of the animal scratching and gnawing the parts. This condition is in many cases most intractable, and often tries the patience of the most long-suffering of practitioners, especially in warm weather. Sometimes, however, with the advent of cold weather, cases which one has been treating most assiduously and, alas, fruitlessly for a long time, suddenly begin to improve, the irritation diminishes and resolution takes place without any apparent reason. Unfortunately these miracles do not occur as often as one would like.

There is another form of eczema which is very common and which I should like to mention, namely

INTERDIGITAL ECZEMA.

This occurs in middle-aged dogs which are pampered and overfed. The dog is noticed to go suddenly lame and the lameness quickly becomes pronounced, blisters form between the toes, become very tense, red and extremely painful. After evacuation of their contents, relief is immediate, and, in a day or two, the lameness disappears.

This condition is, unfortunately, subject to recurrence, and often forms a source of annoyance, as your client wonders why you don't cure them, and probably lays it down to your lack of skill. In other cases the skin takes on a dry appearance.

Treatment. The different methods of treating eczema are legion and, probably, each of you has his own particular mode. At the same time, from our standpoint as canine practitioners, this is the most important part of these remarks, and it is with a view of promoting a useful discussion on the therapeutic treatment of eczema that I have ventured to encroach upon your time this evening.

I am of opinion, however, that no hard and fast line of treatment can be laid down, as most cases must be

treated on their own individual merits. Perhaps we are too apt to give up a particular line of treatment too soon, before a reasonable trial has been given, and thus condemn the use of the agent used without just cause.

The first care, in all cases, is, if possible, to arrive at the cause, for, by removing the animal from certain conditions of life in which it has existed, you may have a far greater chance of bringing your case to a successful issue than otherwise. The patient must be placed in a large, clean, well ventilated kennel, and an abundance of pure fresh water supplied to him daily. It is necessary to cleanse the animal by washing to remove all filth and dirt from the skin. Care must, however, be taken to select a non-irritant soap which does not contain too much alkali or other deleterious agents as carbolic acid, tar products, etc., in excess. A superfatted soap such as Castile soap is the one to use. Excessive friction must be avoided, and here I may say that although cleansing of the skin is initially necessary, too frequent washings are injurious to your case. Remove the hair from the affected patch and for a distance around—this prevents it from adhering to the moist sore surfaces. The patch or patches, if very moist, may be dried with a pad of cotton wool, and your dressing then applied.

In the very moist forms, the best treatment is by the use of powders dusted on to the surfaces several times a day. For this purpose I use the following formulæ:—

- (1) Starch, oxide of zinc, boracic acid and iodoform;
- (2) Starch and ac. salicylic;
- (3) Bismuth, oxide of zinc and starch;
- (4) Flour and sulphur.

In cases where no benefit is seemingly derived, lotions, liniments or ointments may be used, and the following I have used with varying results:—(1) Liq. plumbi, glycerine and water; (2) Liq. plumbi, liq. carbonic detergent, glycerine and water; (3) in cases which keep very moist and are not amenable to treatment, I know of nothing better than a solution of nitrate of silver 2-4 per cent. Ointments of oleate of copper and paraffin mull; oleate of zinc; oxide of zinc; resorcin co.

The latter I have used with the greatest success, especially in cases where the irritation has been great. In cases where the skin is very irritable, relief can sometimes be given by occasional tepid baths of pot. Permang. 1-2 per cent.

Internal treatment. In the first place it is necessary to alter the character of the blood, clear out the intestines and put the animal on to a proper and suitable diet. For this purpose salines may be used, the following being a white mixture which I employ:—R. mag. sulph. ; mag. carb. ; sod. sulph. ; sod. bicarb. ; aq. chlorof.

This mixture, administered two or three times a day for a week. A change of diet is necessary, but, at the same time, a fairly liberal diet must be given, and may consist of soups, vegetables, brown bread, dry crusts or toast; very starchy foods, such as potatoes being avoided. A whole diet of raw lean meat has in some cases been attended with much success, whilst in other cases has proved too stimulating. Tripe being easily digested and very nutritious, may be given in moderation. Reasonable exercise is necessary and in weakly animals, tonics such as iron and quinine or cod liver oil emulsion may be used.

Treatment of Chronic Eczema. The treatment here is to a certain extent similar to that in the acute form, save that more drastic measures may have to be resorted to. Liniments and ointments are usually employed, for here the skin is thickened and often covered with dry, hard scabs. Ointments containing preparations of tar, resorcin, ichthyol, are specially useful. Unfortunately the latter are rather dear, and in an extensive case may prove a consideration. Other dressings I have used are liniments composed of:—(1) Olive oil, liq. carbonis detergent., and liq. plumbi; (2) Olive oil

and salicylic acid 1-40; (3) Glycerine and water; (4) Olive oil and paraffin; (5) Soap in rectified spirits, with oil of tar, resorcin or ichthyol.

Give salines internally, followed by arsenic in small doses in form of Donovan solution and 2-5 minims given in food. Diet as in the acute form.

Treatment of Interdigital Eczema. Fomentations to the foot and, when the time arrives, lance the vesicle and cauterize its interior with nitrate of silver, afterwards treating as an ordinary wound. A course of arsenic is necessary, and diet and mode of living must be changed.

In conclusion, I thank you for your patient hearing of a subject which may not be so interesting to some as to others, and if a profitable discussion should be the result of this paper, I shall be amply repaid for bringing the subject before you.

DISCUSSION.

The PRESIDENT, in throwing open the subject for discussion, said: I am sure we have all heard Mr. Green's paper with great interest, and I am sorry there are not more here to hear it. I shall be glad if one of you gentlemen will open the discussion.

Mr. T. C. FLETCHER (Sheffield), said: Mr. President and gentlemen, I am in the unfortunate position of very often having to open the discussion on a paper when I would rather follow someone else, but at an ordinary meeting there has to be someone with sufficient "cheek" to start.

I have listened to the paper with very great pleasure because as things happen during one's professional career, a class of professional work comes to you whether you want it or whether you do not. Whether it is because there is a natural leaning towards it that you do not know of yourself I cannot say, but during my professional career dog practice has come to me without perhaps having been sought, and I take it that in comes because one can manage a dog unconsciously better than another member of the profession would do. I have seen the same thing occur where a professional man does not like dogs, and nothing can make him. You get the same with ladies: you get one who is passionately fond of dogs, and you get another who has a weakness for cats. You do not often get the two. Cat practice I do not like, but dog practice I have a particular love for. When you get the confidence of a dog you get an animal that is helpful to you with any treatment that you may use. The skin diseases which Mr. Green has enumerated are a source of interest to me, and are, I believe, to a great many practitioners apart from any day book consideration. In listening to a paper like Mr. Green's you make a note in your own mind of something you intend to say, the essayist goes on to another subject, and you are so impressed with another thing that you forget what you originally wished to speak about. That is the reason I have made so many notes.

The original thing that interested me was the kind of dog soap to use. Dog soaps to my mind are a great source of income to us, because the flea killing, fly killing soaps are a very great cause of the mild cases of eczema that we get. As far as I can I never use any of a carbolic nature, *i.e.*, soaps to kill fleas or other vermin attacking dogs' skins, and although I do not make a great income from dog soaps, because the makers won't make the soaps which you would wish to use, I have to do the recommending when clients ask what they should use. Years ago I used to get a soap made by Jeyes, the disinfectant people. It was a brown soap which, after it had stood in the tin for some time, crystallised. It was very pleasant and was made up in large and small tins. I sold a great quantity—the large tins for horses, and the small tins for dogs. On applying to the makers to supply me with some more they said

they had stopped making it and that I could not order enough. I have a letter from them which I intended to send to the veterinary press asking veterinary surgeons to join me in ordering this particular soap in order that Jeyes would make it again. I always advise owners to use the best soap they can afford.

Passing from that to the meat question—I am very favourable to ordering raw chopped meat for dogs with skin disease. They get too much biscuits, bread, potato and gravy, and I think if they were put on a meat diet for a few days together, and then on a modified "ordinary," good results would be obtained.

Moist eczema is well known to all "doggy" people under the name of "blotch," and I should like to ask Mr. Green if it is "blotch" that he means when he refers to moist eczema. "Blotch," when it comes to us is very bad, the skin is all bald, and I have had in some cases to give a dose of morphia to allay the irritation. Chronic eczema, in my opinion, is never cured unless the dog is dressed all over.

I think I have given up the treatment of inter-digital eczema. Inter-digital eczema if let alone will cure itself. The principal thing you are asked by clients is, "How can I stop this?" The stopping of inter-digital eczema is the most difficult thing one has in dog practice. You can only stop it by dressing once a week with a proper inter-digital dressing; even then it recurs.

I remember having a big mastiff once, some years ago, and I never in the whole course of my experience had a dog that was so troubled with inter-digital eczema, and I cut and carved it about till I was ashamed of myself.

The treatment of all these cases is a matter of the individual's own experience. Mr. Green brings us samples of ointments. I am very pleased to hear that they suit his cases. Personally I do not get good results with them. Therefore, I fall back on my own particular remedies, and occasionally have a fit of change completely. I will not enter into the question of the treatment of the different forms of eczema. In chronic eczema if the dog be dressed occasionally he must be dressed all over to do any good.

The principal difficulty that I have had in the treatment of small pet dogs is the irritation of the skin without any eczema. You examine the skin and you cannot find any disease or cause of irritation about it. The owners complain of the dogs scratching, and I myself have seen them, when visiting the house, laid in front of the fire scratching and kicking madly. In those cases there is nothing like tepid baths with some toilet vinegar or something of that sort in them. I do not know that toilet vinegar has any particular action, but it allays the irritation.

I do not think, unless you alter the conditions that the animals live under, you can do away with this irritation.

I am sorry that the attendance is not what it ought to be, and that the subject of eczema in the skin of the dog does not receive the attention of the profession that it should. It is such a wide subject, and I think Mr. Green is very wise not to touch on all its forms. I thank Mr. Green for his essay.

Mr. MURGATROYD (Sheffield), asked if Mr. Green could say what was the real cause of eczema, and why, in the case of inter-digital eczema, is lotion applied, and should not the proper treatment be to get at the cause?

Mr. C SECKER SMITH (Barnsley), said: Mr. President and gentlemen, I should like to thank Mr. Green for his very interesting paper. There is no doubt it is a subject which we, as general practitioners, come across, and that it is one that at times causes us a lot of worry and trouble. In a lot of cases we are more worried by the owners than by the complaint in the dog. These lady owners are certainly very trying and annoying in regard to the treatment of dogs with eczema, and if they would only allow us reasonable time we might possibly show

them a good result from the treatment we employ. What I have been waiting for, for a number of years, and I have not come across it yet, is a specific for eczema. What you try to-day you may get an excellent result with, but try the same treatment on another dog to-morrow, and you might as well throw cold water over it. That is a great difficulty I have come across. The main point with regard to treatment is certainly that you have got the direct cause of the complaint. Mr. Fletcher recommends a course of raw meat. I cannot say I am altogether in favour of that. One thing that puts me against it is this: if you give a dog a course of raw meat you have a great difficulty in getting him back to the food he has been used to before. My experience has been that a long continued course of raw meat is certainly not good for the animal.

In regard to the inter-digital form, I cannot say that I have ever had any satisfactory results from anything I have done or applied. Like Mr. Fletcher, I have cut them out, and in a few weeks I have had the dog brought back again as bad as ever. I have applied all sorts of lotions and dressings, poulticings and liniments, but I cannot say I have ever had any good permanent results. I have known cases where I have applied an astringent lotion, and it has effected a really marvellous cure, simply because the dog from some cause or other has been free from the complaint afterwards. I cannot say it has been due to any special treatment or to any one particular drug or internal treatment.

In regard to soaps for dogs, there is no doubt about it, as Mr. Fletcher says, that we get more cases of eczema from the special dog soaps which are sold than probably anything else.

I should like to thank Mr. Green for his paper, and I hope we shall derive some benefit from the discussion.

Mr. R. HUDSON said: I should like to thank Mr. Green for his paper, and although I have not much dog practice, what I have has an interest for me like it has for Mr. Fletcher.

In dealing with eczema in the dog I find oily dressings are the best, containing sulphur and sometimes tar. I have a dog at present that is suffering from eczema, and he is bordering on the chronic state. He was in such an irritable condition when he was brought to me that he was almost biting pieces out of himself. I am treating him with the old fashioned dressing of oil, sulphur, and tar, and he is doing very well. In some of the advanced cases of chronic eczema, when the skin has become quite thickened, I think the best thing is to cut the piece right out. In other cases I have had good results from a weak solution of formalin.

In inter-digital eczema I generally find that frequent purgatives with as much exercise as you can give a lame dog, and bandaging, has a tendency to reduce the swelling. In cases that come to a head, liniment and a mild dressing is sometimes effective, and in other cases it is necessary to cut the part out.

I had a case not long ago in which the boil, or whatever it may be called, was so great that the joint was affected, and it has now united and become a rigid joint. The animal was so lame that it was necessary to put on him a fixed bandage.

Mr. T. C. FLETCHER said: Mr. President and gentlemen, Mr. Green spoke of a hobble, and said that he uses it. If he cares at any time to see a little hobble that I have that is made with straps and buckles to fit even the smallest dog and to fit the ordinary big dog, I should be very pleased to show him. I have found it the most useful article I have in dog practice to prevent scratching. It is certainly of a pattern to suit anyone who has an extensive dog practice.

Mr. G. J. FURNESS (Alfreton), said: Mr. President and Gentlemen, I came here this afternoon not so much because I have a big dog practice, but because occasionally one is asked to treat these cases of eczema. In

acute cases we get on more successfully than with the chronic one. I give a good purgative for a start, and keep the patient on a light diet. I find in most cases the disease is attributable to over-feeding. I use an astringent lotion and have had good results from it. I have treated cases where the discharge has run from the ears. I have used a strong solution of alum and sulphate of zinc, and dusted the ear with boracic powder. I have also had cases with patches on the back of the head of a similar nature. I have cut the hair off, given plenty of lotion and powder, and kept as much food away from them as possible. I feed the animals lightly and do not have much trouble.

I think the most annoying cases are those which lay in front of the fire and kick and scratch.

Someone suggested arsenic. I got a big shock some years ago. I got some little pills, which unfortunately "did for" the dog.

I should like to thank Mr. Green for his paper, and I am sure I have been repaid for my journey to Sheffield.

Mr. J. S. LLOYD (Sheffield), said: Mr. President and Gentlemen, I wish to propose a very hearty vote of thanks to Mr. Green for his paper.

The only point that struck me in his remarks was this—that he omitted to say where he would keep his dog other than in an airy, well ventilated loose box. Perhaps you do not get the same difficulty in towns as in the country, but my experience whilst in country practice was that if I kept dogs suffering from eczema in the sun I could not get them cured. I found it was much better to keep the dogs in a cool place. I remember a particular case at a grammar school, where the animal was particularly well fed. I tried oil of tar, lead lotion, and carbolic acid, but with no satisfactory result. I got a small bottle and a camel hair brush. I filled the bottle half-full of carbolic acid and half-full of tincture of iodine, i.e., carbolised phenol. I painted the wounds on that dog every time I went there, till I could see the skin around the edge of each wound was beginning to heal. I found that treatment very successful indeed. I followed up with a mixture of tincture of myrrh, tincture of benzoin, and liq. plumbi, which, when it dries, leaves a yellow powder on the face of the wound. I found the dressing very successful with ordinary wounds too. I will not take up the time of the meeting, but will propose that a very hearty vote of thanks be given to Mr. Green for his interesting paper.

The vote of thanks which, was seconded by Mr. Morgan, was carried with acclamation.

Mr. GREEN, in reply, said: Mr. President and Gentlemen, the reason I brought this paper before you is this—it is not so much the individual case you are called in to treat, but what the treatment, and the successful treatment, of a dog means to your practice. You might have a wealthy client whose wife has a dog which is affected. She sends the dog to you, you cure him, and the probable result is that the husband calls you in to attend to his hunter.

Mr. Fletcher talked about dog soaps. The soap which I mean to be used is super-fatted, that is to say, one which has an excessive amount of fat in it, and one that has a soothing effect upon the skin. I usually use Castile soap.

Replying to the questions and criticisms about inter-digital eczema, in my opinion the most important thing is to try to cure the cause; it is no use trying to cure the toes without. The cause is internal; it usually occurs in dogs that are pampered and live a lazy life. The foods are not assimilated; it may be due to the liver not performing its functions, and that is why I particularly recommend the use of sulphate of soda; it has a good effect upon the liver. That is only the initial treatment of these long cases.

Mr. Furness says he does not like arsenic. I do not

think there is anything like it. It is no use unless you push it. If you commence with small doses you will be amazed how much you can give to a dog. It is no use discontinuing after a day or two—use it for twenty days if necessary.

Mr. Fletcher said I had not touched upon all forms of eczema. I am simply dealing with eczema, not with every skin disease in the dog. You get a little dog that is scratching himself in front of the fire, and you cannot find anything. I think that the best way is to give a bath of a one per cent. solution of permanganate of potash.

Raw meat is a most debatable point. Some people say it is right, some say it is wrong. If you give raw meat, do not give any fat with it. In preference to beef I should give a little chopped-up mutton.

Mr. Hudson mentioned something that is perhaps rather unique, that is the cutting out of an affected piece of skin. In chronic eczema you get such a large area affected that you cannot do this.

I thank you very much, gentlemen, for your kindly criticism of my paper.

PARLIAMENTARY.

In the House of Commons.

THE ARMY VETERINARY SERVICE.

Mr. SWIFT, M.P., asked the Under-Secretary of State for War whether the concession which had been granted to members of the veterinary profession belonging to the Civil Services, *i.e.*, the Board of Agriculture, the D.A.T.I. (Ireland), the Indian Civil Service, etc., whereby those with five years' service would, on joining the Army Veterinary Service, be given the rank of Captain, would be extended to experienced members of the profession who had relinquished lucrative private practices in order to serve their country in the Army Veterinary Service.

Mr. TENNANT: "It has not been considered necessary to extend this concession to all members of the veterinary profession of five years' standing who have been appointed to temporary commissions in the Army Veterinary Corps. Their qualifications and status in the veterinary profession are, however, taken into consideration in selecting them for appointments in which higher rank is a necessity."

IMPORTATION OF MARES.

Mr. BIRRELL (the Chief Secretary for Ireland), answering a question by Mr. Lynch, M.P., said that no mares had been imported into Ireland from the seat of war. Adequate precautions have been taken to prevent the introduction into this country of animals affected with hereditary or contagious diseases.

Neglecting a Horse—convicted.

At the Wallasey Police Court on Monday, 12th July, before Alderman T. Raffles Bulley and Mr. E. Russell Taylor, a dealer, named Joseph McNelis, of 409 Cleveland Street, Birkenhead, pleaded not guilty to a charge of unreasonably omitting to provide proper and sufficient food, shelter and attendance for a horse, thus causing it unnecessary suffering.

The horse was kept in a field in Poulton, where there was plenty of grass, and water that had collected in hollows.

Evidence was given by a Poulton butcher, who said he first noticed the animal—a grey mare—in the field about three weeks ago, when its breathing was laboured. He had noticed it on several occasions since, and had discovered its hoofs were fly-blown. Its breathing had

not improved, and he was surprised it should have been there so long without attention.

P.C. Williams said he saw the horse on Thursday, when it was in a bad condition. A veterinary surgeon was summoned and the animal was destroyed.

Mr. W. Fowle, a veterinary surgeon, of Birkenhead, said he found the animal suffering from septic pneumonia, and a post-mortem examination showed that the lungs were badly diseased. It was in poor condition, but not emaciated. He did not know at the time that it belonged to Mr. McNelis, whom he knew, and who had called him on several occasions when his horses needed attention, and at all times Mr. McNelis had been anxious to look after his horses.

Prisoner said he bought the horse for another horse, a set of harness and so on some time ago. It was rather lean, but had good legs and good teeth, so he let it roam free in the field to recruit its strength. He went to see if it was all right every day and had not noticed anything strange about it. As soon as he got to know, on the Thursday, when the police communicated with him, that it was very ill he tried to get through on the telephone to a Liverpool firm to arrange for it to be destroyed. This latter evidence was corroborated by Walter Carson, a witness brought forward by defendant.

The Chairman, in fining prisoner 15s., and ordering him to pay 21s. towards the expenses connected with the case, said he did not consider that McNelis had looked after his duty as efficiently as he should have done, and he ought to have called a veterinary surgeon sooner.—*The Birkenhead News.*

The Milk and Dairies (Consolidation) Bill.

This Bill passed through Committee of the House of Commons on July 19th without any amendment, and was read a third time. The Bill, which was introduced in fulfilment of a promise made during the discussion of the Bill of last session, consolidates without any amendment the main provisions of the law relating to milk and dairies. It does not profess to be a complete code of the law relating to these matters, but in the fifth schedule an attempt has been made to collect, for the information of dairymen, the chief provisions affecting them outside the scope of the present Bill. This schedule enumerates the provisions of the Public Health Acts, and the Public Health (London) Act, 1891, with respect to nuisances and the sale of food so far as they relate to milk and dairies, the Sale of Food and Drugs Acts, 1875 to 1907, the Public Health (London) Acts, sections 69 and 71, the Public Health Acts Amendment Act, 1907, sections 53 and 54, and the Infectious Disease Prevention Act, 1890, section 4.—*Brit. Med. Jnl.*

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, August 3.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temporary Lieutenants:—

J. F. Thurston. Dated July 14.

J. D. Broome, G. W. Lucking, T. G. Millington, L. F.

Eady, R. E. Murison, J. McD. R. Greig, K. J. S.

Dowland. Dated July 15.

Tempy. Lieuts. relinquish their commns. on account of ill-health:—

T. C. Howatson, W. F. Hughes. Dated August 4.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Date of appmt. of Lieut. G. F. J. Prickett is May 8, and not as in *Gazette* of May 21.

MEDITERRANEAN EXP. FORCE. ARMY VET. CORPS.

The following casualty is reported:—

WOUNDED—Pte. A. G. Burden, 2760.

Personal.

STOKOE—MILLER. On the 31st July, at Christ Church, Lee, by the Rev. W. P. McDonald, Rector, Richard Stokoe, Lieutenant A.V.C., youngest son of Col. and Mrs. Stokoe, of Osborne Place, Chelmsford, to Ada Priscilla, Widow of Percy Reginald Miller. Australian papers please copy.

GOLDEN WEDDING.

WILLETT—WYDELL. On July 30, 1865, at St. Giles' Church, London, Albert Willett, veterinary surgeon, of Staines, Middlesex, to Elizabeth Wydell, of Spilsby, Lincolnshire.

PHAIR. On the 31st July, at the Nursing Home, Whipps Cross Road, Leytonstone, to the wife of Lieut. Edgar J. Phair, A.V.C., a daughter.

PERKINS. On August 1st, at 43 Havelock Road, Hastings, to the wife of P. Perkins, late M.R.C.V.S.—a son.

TODD. On the 3rd August, at 20 Devonshire Terrace, Hyde Park, W., to the wife of Major A. G. Todd, A.V.C.—a son.

Mr. F. W. TAYLOR, V.S., New Ross, was awarded the first prize in the Thoroughbred sire class for his stallion, Macanna: at the 16th New Ross Show held on Wednesday, 21st ult.

PRESENTATION.

Mr. JAMES SOMMERVILLE, M.R.C.V.S., first assistant in the Corporation's veterinary staff, was presented with several gifts by workmen and friends at the Georgie Abattoirs, Glasgow, on his leaving to take up a commission as Lieutenant in the Army Veterinary Corps. The gifts included a handsome silver cigarette case, suitably inscribed, a gold signet ring, and a supply of smoker's requisites. Mr. James Cochrane, the Superintendent, in making the presentation, said that Mr. Sommerville had been nearly five years in the service of the Corporation, and during that time he had exhibited in a marked degree the qualities of tact and courage in the performance of his duties. He hoped that Mr. Sommerville's service in the Army would not require to be prolonged, and that he would soon be back to his duties as a veterinary inspector with the Corporation.—*M.T.J.*

OBITUARY.

GEORGE WARTNABY, M.R.C.V.S., Burton-on-Trent.

Graduated, Lond.: April, 1878.

Mr. Wartnaby was a Vice-President of the Royal College of Veterinary Surgeons in 1899, and served on the Council from 1896 to 1904. He died on Friday, July 30th, aged 64 years.

CHARLES HARTLEY, F.R.C.V.S., Lincoln.

Graduated, Lond.: March, 1888.

Mr. Hartley was a Vice-President of the Royal College of Veterinary Surgeons in 1896, and served on the Council in 1902-1903. He died at his residence, 16 Lindum Road, Lincoln, on Friday, July 30th, aged 59.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended July 31	2	3			2	12	21	39		60	172
Corresponding week in											
1914 ...	2	2			3	3	27	34		82	913
1913 ...	6	6			5	7	26	33		58	1001
1912 ...	8	10	5	63	4	7	36	47	1	44	605
Total for 31 weeks, 1915	393	451			32	59	‡535	‡1171	159	2747	12360
Corresponding period in											
1914 ...	482	522	11	74	68	212	1503	2613	150	2599	27518
1913 ...	351	384			107	281	1819	3710	124	1532	20720
1912 ...	537	611	60	384	110	216	2269	4954	166	2071	26596

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, August 3, 1915

† Counties affected, animals attacked: Kent 11, Lanark 1

‡ Figures for eighteen weeks only.

IRELAND.	Week ended July 31	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
		Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
		(a)		(a)		(b)		(b)		(b)	(a)	
Week ended July 31	4	3	15
Corresponding Week in												
1914	1	5	5	4	3
1913	1	1	1	14
1912	1	1	...	2	...	...	1	...	...	4	32
Total for 31 weeks, 1915	...	1	1	...	...	1	3	44	...	268	162	910
Corresponding period in												
1914	1	1	76	957	...	...	55	375	142	712	
1913	93	352	98	589	
1912	3	3	16	200	...	...	49	262	161	1421	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, August 3, 1915.

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1414.

AUGUST 14, 1915.

VOL. XXVIII.

WHOLE-TIME v. PART-TIME VETERINARY INSPECTION.

Mr. Hugh Begg, in his very instructive paper to North Midlands V.M.A., dwells at some length upon this old controversy. At present, the question need not trouble us greatly—our concern rather is to find veterinary surgeons to do all the preventive work that ought to be done. When an increase of whole-time inspection becomes possible again, it will be found that its desirability has passed beyond the stage of controversy.

Few now doubt that veterinary inspection, both for municipalities and counties, will ultimately have to be done by whole-time men. Fewer still will deny that, on the whole, the substitution of whole-time for part-time inspection will be a great improvement. A whole-time inspector is independent of all clients and exempt from the suspicion of rivalry with reporting practitioners—considerations which, though they do not necessarily affect the work of the individual inspector, do render whole-time inspection superior to part-time as a system. Further, veterinary inspection is now so highly specialised that only a very exceptional man can reach the whole-time level if he is mainly occupied with general practice. Either of these reasons is a sufficient argument for whole-time inspection; together, they are unanswerable.

But we doubt whether whole-time inspection will become universal so rapidly as some suppose. Probably for some considerable time a good deal of part-time work will continue to be done in country districts—perhaps under the superintendence of whole-time chiefs—and thus the number of really old and tried part-timers who lose their appointments may not be so very large. No doubt some will suffer; but it must be remembered as a set-off that the establishment of whole-time inspection ought indirectly to bring more work to general practitioners.

DEPARTMENTAL COMMITTEE ON HORSE SUPPLY.

None too soon, the Board of Agriculture has appointed a Committee to consider and advise regarding "the production and maintenance in England and Wales of a supply of horses suitable and sufficient for military purposes, especially on mobilisation."

The Committee includes such capable men as Sir Ailwyn Fellowes and Mr. Chaplin; and we may expect sound advice from them. But their labours will bear little fruit unless they can induce the State to give far more liberal financial support to horse-breeding than has ever yet been given.

SPECIFIC TREATMENT OF WOUNDS WITH POLYVALENT SERUM.

By HENRY GRAY, M.R.C.V.S., Kensington.

On March 4th, 1912, Professor Leclainche, formerly Director of the Lyons Veterinary School, now Inspector-General of the Veterinary Sanitary Service, Ministry of Agriculture, Paris, and Vallée, Professor of Contagious Diseases, Alfort Veterinary School, presented to the Academy of Sciences a paper on the specific serotherapy in the treatment of infected wounds. The serum is prepared from a great variety of microbes usually found in infected wounds, which are cultivated on agar or on Maurice Nicolle's potato agar. The microbes are killed with ethylic alcohol, dried and preserved dry in vacuo in a refrigerator.

The desiccated germs are weighed, then rubbed up in an agate mortar, and afterwards made into an emulsion with physiological serum (normal saline serum). From 5 mg. to 5.50 mg. of the dried microbial bodies, corresponding to a weight ten times greater than that of the fresh microbes are injected. The inoculations are made every eight days with progressive doses. After several months of treatment, the treated can support an injection of 50 cg. of fresh microbes, although there is an acute local reaction and rise of temperature.

The serum obtained is very rich in agglutinins and sensibilisatrices. The deviation of the complement test indicates that the latter are capable of fixing quantities of fresh alexine often superior to 1.3 cm. in the guinea-pig either upon the microbial mixture used for treatment or upon any of the germs composing it.

These sensibilisatrices, which represent the essential ferment of the intra-leucocytary digestion of the microbes, act in the manner of a powerful specific antiseptic, and are without doubt very favourable to cellular life, and certainly incapable of disturbing it.

The authors at the time of their paper had used this serum in the treatment of various wounds, such as extensive old or sluggish and suppurative cavities. After washing them with boiled water, the liquid serum or the desiccated and powdered serum is applied.

In every case the duration of cicatrization was notably shortened, and generally the serum acted with surprising rapidity. Comparative tests were made with normal serum of the horse, but this did not give such happy results.

Professor Leclainche had already in 1898 obtained an immunising serum for malignant cedema by

treating the ass with a series of intravenous inoculations of the septic serosity; and in 1901 this distinguished serologist and veterinarian, in conjunction with Morel, determined with precision the procedure of its use and its mode of action, which is anti-microbial as well as anti-toxic.

These methods are worthy of an extended trial, especially in certain country districts where wounds often slight in appearance, are neglected, and frequently end fatally from infection.

According to the latest reports the polyvalent serum of Professors Leclainche and Vallée is producing miraculous recoveries in soldiers suffering from almost hopelessly infected and mutilated wounds.

ABSTRACTS FROM FOREIGN JOURNALS

HÆMORRHAGIC INFARCT OF THE MEDULLA OBLONGATA, ORIGINATING IN STRANGLES, AND TERMINATING IN BULBAR PARALYSIS AND MORTAL SYNCOPE.

Jaunin has recorded the case of a five-year-old horse, which entered hospital suffering from a strangles abscess.—(*Revue Vétérinaire*). The horse had been treated for strangles the year before, with apparent success.

The abscess was opened; and all went on well for six days. Then, one morning, as the groom entered the stable, the horse trembled and fell backwards to the ground. He was covered with sweat, the eyes were staring, the mouth was open, and the conjunctiva and buccal mucous membrane were cyanotic. Death took place in three minutes.

The post-mortem examination resulted as follows. In the region of the throat, the operative incision traversed the inferior part of the parotid gland; and the surrounding tissues were slightly lardaceous. The superior and anterior retropharyngeal glands and the guttural pouch were normal, as were also the roots of the jugular and the branches of the carotid. In the thoracic cavity, the lungs, heart, and bronchial and pectoral lymphatic glands were normal. In the abdomen, also, all the organs were free from lesions.

In the cranial cavity, the dura mater, cerebrum, and cerebellum were apparently healthy. There was an absence of liquid in the ventricles. Upon the left inferior aspect of the medulla oblongata, immediately behind the posterior extremity of the corresponding pyramid, there was a superficial hæmorrhagic infarct. This was prolonged posteriorly by a superficial irregular congested area of from 2 to 2-2/5 inches broad. The nervous substance, when sectioned in the direction of the median furrow, presented hæmorrhagic stains which were most marked towards the central portion.—(*La Clinica Veterinaria*).

A CASE OF CANINE LEISHMANIASIS.

A. Lafont and F. Heckenroth record the following case, which was observed in a native dog in

French West Africa.—(*Bull. Soc. Path. Exot.*, 1915, April 14. Vol. 8, No. 4, pp. 162-164).

The animal was in very poor condition and was affected with mange. Numerous other ectoparasites were also found. At the post-mortem the liver was found to be enlarged and pale in colour, and the spleen was also enlarged. There were numerous tubercles in the lungs in which acid-fast bacilli were found. Smears from the spleen and liver showed the presence of numerous *Leishmania*, especially those made from the former. The bulk of the parasites were free, but macrophages and liver cells were both found containing them. In the liver smears there were also found cyst-like forms which appeared to be in a stage of multiplication. These cysts measured from 15 to 20 microns, and contained from 2 to 10 parasites. The appearances of those in which only two or three were found suggested that some of the individuals had escaped from the cyst. The parasites are said to have closely resembled *Leishmania infantum*.—(*Tropical Veterinary Bulletin*).

W. R. C.

COUNTY VETERINARY INSPECTION *

By HUGH BEGG, F.R.C.V.S.,
County Veterinary Inspector for Lanarkshire.

Mr. Chairman and Gentlemen,—When I came under the seductive spell of my friend, your esteemed Secretary, Mr. Lloyd, at Christmas-time last year, and decided to accept through him the honour of your kind invitation to come here and read a paper on "County Veterinary Inspection" at this mid-summer meeting, I entertained the hope that the sanguinary struggle of the nations would be nearer an end than it is, and that we might be able to discuss our subject with lighter minds than we yet possess, and with a clearer prospect of the early resumption of work under Orders still in indefinite suspension, and of the inauguration of new statutes of momentous interest to the veterinary profession.

That we should have deemed it expedient, despite the regrettable state of international affairs, to meet to-day to discuss matters that belong essentially to the domain of domestic policy, bespeaks in us a faith unbounded and unreserved that our national interests are safe in the hands of those to whom it is given to plan, or work, or fight for the righteous cause of the Allies.

I recollect that Mr. Lloyd quite persuaded me that "County Veterinary Inspection" would be an easy subject for me to deal with, but he rather, though perhaps unwittingly, misled me. A theme so wide in scope is not easily digested into one paper, and I admit some difficulty in determining what phases of it would lend themselves most to a debate likely to ensure the success of your meeting.

In fact, the bare history of the administration of the Diseases of Animals Acts and the employment of veterinary surgeons in connection therewith is in itself a very large question, worthy of the efforts of some individual who, having knowledge of it and facilities for research regarding it, could hope to do the subject justice.

Being ill-endowed in either direction, and though I have looked into the matter a little, I will not say much from the historical point of view. It would seem that in counties in Scotland prior to 1889, the Acts and Orders relating to diseases of animals were adminis-

* At the meeting of the North Midland V.M.A., at Sheffield, on July 20th. See pp. 68-67.

tered by a joint committee consisting of representatives of the Commissioners of Supply and of occupiers of agricultural subjects. In many cases the work was carried out by persons whose qualifications and experience were somewhat doubtful, but, when serious outbreaks of disease occurred, it was the custom to call in the services of veterinary surgeons of some professional standing. The scope and importance of the work of County Veterinary Inspection done by such practitioners and, until recent years, by their successors, ebbed and flowed with the periodical visitations which the counties experienced of the great animal plagues that decimated our herds.

Indeed it may be stated that the diseases we attempt to control to-day are not those which engaged the energies of the inspector of thirty or forty years ago, although we are always on our guard against these former enemies.

Qualifications of the Veterinary Inspector. What qualifications in the meantime are accepted by the Board of Agriculture and Fisheries as entitling a man to act as a Veterinary Inspector to a Local Authority?

I am indebted to Sir Stewart Stockman for guidance in this matter. Section 59 of the Diseases of Animals Act, 1894, says:—

"The expression 'Veterinary Inspector' means an Inspector being a member of the Royal College of Veterinary Surgeons, or any veterinary practitioner qualified as approved by the Board of Agriculture."

Many of the veterinary inspectors under the Act are appointed by local authorities, and though the Board has to be notified of such appointments and theoretically exercise the right of veto on account of a veterinary practitioner's qualifications, they have, I understand, never raised objections to registered practitioners being appointed by local authorities. They have, instead, adopted the attitude that they should stand by Section 17 (1) of the Veterinary Surgeons Act of 1881, which says:—

"If after the 31st day of December, 1883, any person other than a person who for the time being is on the Register of Veterinary Surgeons or who at the passing this Act held the Veterinary Certificate of the Highland and Agricultural Society of Scotland, takes or uses the title of Veterinary Surgeon or Veterinary Practitioner or any name, title, addition or description, stating that he is a Veterinary Surgeon, or a Practitioner of Veterinary Surgery or any branch thereof, or is specially qualified to practise the same, he shall be liable to a fine not exceeding twenty pounds."

The Board published no notification of what they approved until the Animals (Transit and General) Order of 1895, of which Chapter 11, Article 25 says:—

"The following is hereby approved as the qualification of a veterinary practitioner (not being a member of the Royal College of Veterinary Surgeons or, in Scotland, not holding the Veterinary Certificate of the Highland and Agricultural Society of Scotland, to be a Veterinary Inspector of a Local Authority in Great Britain, namely,—that he is registered as an existing Practitioner under Section 15 of the Veterinary Surgeons Act, 1881, or that previous to the 10th day of May, 1883, he was employed by that Local Authority as an Inspector or Veterinary Adviser under the Contagious Diseases (Animals) Act, 1869."

Such approval by the Board shows an ample tolerance of the desire of any local authority to utilise the services of old officials who are not graduates of the Royal College of Veterinary Surgeons. As you are aware, the number of persons qualified as approved by the Board, other than Fellows or Members of the Royal College of Veterinary Surgeons, is gradually lessening, and in course of time none but fully qualified men will be acting as veterinary inspectors to local authorities.

It is to be noted that the Board set an example in

appointing their own veterinary staff, in that they accept only graduates of the Royal College of Veterinary Surgeons, who are known to have had experience in practice, and the continuance of every appointment is conditional on the holder passing a prescribed examination at the end of two years.

Whole time and part time County Veterinary Inspectors. Seeing that the employment of private practitioners as part time officials, is, as yet, almost universal throughout the counties in Great Britain, I thought it likely that you would expect me to offer some remarks on this important branch of my subject.

You are aware that the number of municipal authorities who have appointed whole time veterinary inspectors is gradually increasing. So far as I can gather, twenty-five have already acted in this way, and the number of qualified veterinary surgeons who hold office as chief or assistant veterinary inspectors is approximately thirty-eight.

On the other hand, the advent of the whole time County Veterinary Inspector is of recent date, and so far as I know, such appointments are confined to Scotland, and obtain only in the Counties of Ayr, Dumfries, and Lanark, embracing four qualified veterinary surgeons.

The appointment of whole time county veterinary inspectors is essentially a question of political economy if nothing more, to decide which, local authorities will no doubt be influenced by the increasing importance that it is being attached to the science of Veterinary Inspection and by the improved travelling facilities which make it possible for an official to overtake the duties of a Veterinary Inspector over a large area.

I confess, nevertheless, however much one may feel convinced of the likelihood or the propriety of a great extension taking place in the near future in the creation of whole time County Veterinary Inspectors, especially in view of the forthcoming operation of Acts which we have unanimously desired, it is not without regret that one can speak in favour of a policy, however sound it may be, that will have the effect of depriving many valued and time honoured officials of work and fees which they must be unwilling or can ill-afford to lose—men, too, who have always made their public work a first charge on their time.

I have no desire to speed the impending issue, nor do I think that anything that I can say will have that effect, but each of you can recall several precedents wherein local authorities, on being vested with new powers to deal with different matters relating to public health, etc., did not hesitate to appoint whole time responsible officials for these special duties intended for the general weal of the public.

When the war is over, and the thoughts of scientific men return anew to the problems that pertain to the prolongation, instead of the destruction of lives of their fellow men, when the "Tuberculosis Order" is reinstated and the "Milk and Dairies Acts" come into play, it seems to me the exigencies of the case, in very many counties, coupled with the actual requirements of the new Acts in this connection, will have the effect of determining and directing the policy of these County Councils and their District Local Authorities towards the creation of whole time officials.

This view may not meet with general approval, but surely it is a matter sufficiently serious to demand, during this time of interregnum, the earnest consideration of every interested individual.

Indeed, I would be surprised if those who share my opinion and have aspirations for public service are not, even now, considering the means necessary for their translation into whole time county veterinary inspectors.

When the time referred to comes, there will be such an increase of veterinary work to be controlled by county local authorities that methods of concentration

and consolidation will be forced upon them—their veterinary needs will then synchronise with their present medical and other requirements, and with those of such municipal authorities, who, through important accessions of veterinary work, were led to the point of creating their veterinary departments. The case of my own county may be cited as an illustration. The County and District Local Authorities of Lanarkshire had, for several reasons, prior to my appointment undertaken certain classes of optional veterinary inspection, much of which anticipated what has been embodied in recent legislation. The veterinary work entailed by the operation of the Diseases of Animals (Lanarkshire) Order, 1907, to which I will refer later, and the regular yearly veterinary inspection of all dairy herds in the county, together with the certain prospect of the passage of the Milk and Dairies Bill, for which they had been strong appellants, were potent factors towards their unanimous resolution to appoint a whole time veterinary inspector in May, 1910.

It is not for me to say whether in the matter of efficiency their action of five years ago has been justified, for I am aware they were served with distinction by their part time officials, but it would not be difficult to show that their decision has proved economically sound, more especially during the fifteen months operation of the Tuberculosis Order.

The coming of the whole time official, though it will be regretted—or something worse, by those who, through it, will be deprived of valuable work, will be welcomed by the great majority of private practitioners. Having no county or local authority work, they are at a considerable disadvantage to those favoured rivals in practice, who, vested with the powers of the local authority, are responsible for the inspection of suspected cases occurring in their practices, and which they are obliged to report but cannot deal with.

The mental effect on the practitioner and the practical results of this, are best understood by those who experience it, and so far as general practice is concerned, it may be held in most cases as constituting an unfair handicap in favour of the appointed man. In the performance of his official duties, the access which he has to the reporting veterinary surgeon's clients begets jealousies that sit ill on the profession, while, everything else being equal, it is to be expected that in the selection of their private veterinary adviser, many clients would prefer the man who carried executive power regarding the Diseases of Animals Acts against which stock-owners occasionally commit minor as well as major offences.

The official who also does private practice, though he may conscientiously carry out all his public duties, can never free himself from the criticism, however unjust it may be, of his rivals in practice and of the public, while it is easy to understand how, by a fearless and perhaps tactless performance of executive work, he might materially decrease rather than increase his private practice.

Considering the many instances in which much of the stockowner's material interests are bound up in the decisions and actions of the veterinary inspector—facts that must be patent to all local authorities—is it not to be expected that the duties of a county veterinary inspector are most likely to be done without fear or favour in an independent and equitable manner by a responsible whole time official, who having none, cannot be accused of possessing side interests liable to prejudice his work.

The creation of veterinary departments and the appointment of whole time veterinary inspectors by County Local Authorities, will beneficially affect the status of the future veterinary inspector and improve his relations to the other departments of county ad-

ministration, and, if so, there will emerge a considerable political advantage to the profession at large.

The new veterinary department will undertake every phase of veterinary inspection in the county and will gather and assimilate the loose threads of minor veterinary duties that in many counties are presently being carried out by officials in the medical and sanitary staffs.

Through contact with the heads of other departments, the chief veterinary inspector will be giving and receiving daily, for his advice will be sought by them and by various committees, on questions and problems to which veterinary knowledge bears any relation. This daily intercourse, especially with those officials of trained legal mind, who are in executive authority, are interested in the veterinary work, and have had long years of experience in the administration of the Contagious Diseases of Animals Acts, is a ripening influence of immense value to the veterinary inspector. He is helped by these means to a more perfect administration of his department, and is made acquainted with many details of policy of his local authority to which part time officials could have but imperfect access.

Again, uniformity of administration would naturally follow the placing of control in the hands of a responsible inspector whose duty it would be to interpret Orders old and new, plan methods of procedure, and arrange for the due and timeous accomplishment of the works and reports regarding it, that belong to the veterinary department.

Further, the relation of the private practitioner to the veterinary inspector would be freed from any bias hitherto existing—and this would mean more than at first apparent—in the efficient control of disease, and if the operation of the various Orders and Acts is to reach the maximum of perfection, this can only be attained by the mutual co-operation of the practitioner and the inspector.

If proof be needed, might I say that during the operation of the Tuberculosis Orders in Lanarkshire, a large number of cases that proved amenable to the Orders were reported by veterinary surgeons direct to me. I have appreciated most highly the valuable information so often given by the reporting veterinary surgeon, and in return, have found that my visits and consultations at their clients' premises were not devoid of opportunities wherein to advance their interests.

On the other hand I have been told by many part time officials whose district of inspection embraced the practices of neighbouring and rival practitioners, that such co-operation was non-existent, and to the extent that this obtained in any area the proper operation of the Order must have suffered.

Provided that the veterinary needs of a county are sufficiently great to take up the whole of a man's time, it would not be difficult to prove the soundness of making such an appointment on economic grounds. On many occasions he may have a very long journey to make to an urgent case, but having many types of work on hand for different committees, he has the opportunity of making other and less urgent visits to other premises *en route* without materially increasing the expense in mile or time. This can be all the more conveniently done when the police stations throughout the county are linked up by telephone, so that the inspector can rely on being intercepted when a special case, requiring instant attention, is reported.

Doubtless, with the appointment of whole time men the work of veterinary inspection will not be lessened, but rather increased, nevertheless, fewer men will be engaged in it.

The question may be asked, What type of veterinary surgeon is likely to be chosen by local authorities who decide to appoint a whole time official?

When it is considered how extensively varied and responsible the duties are which fall to the man who is placed in charge of the veterinary department, and that under the new Milk and Dairies Acts the standing of the veterinarian to the County Local Authorities is raised for the first time, under a Public Health Act, to that of an independent official, most men will concede that such posts will be best filled by those who, having kept themselves abreast of the advance of veterinary science, are also ripe in general clinical experience, particularly amongst bovines, and whose past success in conducting their own business will be a guarantee of their fitness to attend to the affairs of a county veterinary department.

Unrelenting officialism, if it be single-minded and exact, may serve very well as the attitude of the veterinary inspector in administering most of the statutes and orders relating to diseases of animals, but the smooth operation of the Tuberculosis Order calls for other qualities of mind and disposition. To his skill in diagnosis and an intimate knowledge of cattle values, etc., the inspector must add unflinching tact in making with the variously-minded stock-owner the mutual arrangements enacted under the Order.

I reckon, therefore, that as each county veterinary appointment is made, some district will have cause to regret the loss of a trusted veterinary adviser.

I have given more space than I intended to this matter of the appointment of whole time veterinary inspectors, but perhaps its pressing importance will be an acceptable excuse. Let me add that private practitioners need not be apprehensive that the action of local authorities in this matter will seriously prejudice their interests, for the reason that the more strict the regulations of local authorities are as regards the supervision of stock, the more likely are stock-owners to have recourse to the services of private practitioners, so as to avoid any possible contravention of the law.

I now propose to give a resumé of my duties in Lanarkshire. When appointed, these duties were defined in a general way, as the performance of all work required to be done under:—

(1) The Diseases of Animals Acts, including in addition to the examination of animals affected, or suspected of being affected with disease, and the furnishing of reports.

(a) The superintendence of precautionary measures relating to the movement of diseased carcasses and their destruction, as well as disinfection and cleansing of premises, etc.

(b) The attendance at meetings of the Committee, at markets and saleyards, etc., when considered necessary.

(c) The attendance at Court in connection with any cases in which the Local Authority may be concerned for the purpose of giving evidence of a professional nature; and

(d) Such other work as the Local Authority or their Executive Committee may, from time to time, direct.

In the performance of work done under these Acts I am responsible to the Local Authority, and receive instructions from and make reports to the County Clerk.

(2) The Public Health Acts. In the performance of all work under these Acts or any other Acts or orders administered by District Committees I am under the direction of the Medical Officer of Health, and make reports to him.

Duties under the Public Health Acts include

(a) The inspection of meat, should the District Committee so decide;

(b) The inspection of dairies from which it is suspected there is being supplied milk to which may be attributed the outbreak of any infectious disease;

(c) The inspection of dairy herds within the district; and

(d) Any other work of a Veterinary nature which the District Committee or their Medical Officer of Health may direct.

Dealing first with Public Health duties, it may surprise you to learn that so far as "inspection of meat" is concerned, although ten public abattoirs have been established by district committees throughout the county, they are controlled by the Medical Officer of Health with the assistance of qualified meat inspectors, and I do no inspection of meat unless my services are specially requested by the medical officer in cases likely to come before the Court.

The control of Meat Inspection in all cities is, so far as I know, completely in the hands of veterinarians, and if and when new county veterinary departments are created it will be interesting to note whether the special qualifications of veterinary inspectors for this branch of veterinary work will be recognised by Local Authorities.

Now and again I am asked to make a special examination of a certain herd or herds, the milk supply from which may be under suspicion of having caused infectious disease in its area of distribution. These inspections are always done at the request of the county medical officer, and I report to him in detail all that I find abnormal as regards the health of the animals, the conditions of udders and teats, the quality of the milk, structural defects of the cowshed from a veterinary point of view, the state of cleanliness in which the cows and the premises are kept, etc.

Inspection of Dairy Herds under the Dairies, Cowsheds and Milk Shop Orders of 1885 and 1899.

The District Local Authorities of Lanarkshire, realising the pressing need for the detection of cows suffering from tuberculosis of the udder so that their milk (containing tubercle bacilli) might put off the market, inaugurated in 1904 the systematic veterinary inspection of all herds in their districts. For six years up till 1910 this was entrusted to the part-time inspectors who did the executive work of the County Local Authority, and, on occasion, one or more veterinary surgeons were specially engaged for the winter months to carry out this work. Since my appointment in 1910 the medical officer of health has entrusted my department with the inspection of all herds in the county, and is content to receive such interim reports as are necessary, and a final report at the end of the season. Much of the work I have been able to do personally when engaged on other duties. For the first three years I had the advantage of the services of a qualified assistant during the winter months who devoted his time almost entirely to the inspection of milch cows in the more remote districts. With the advent of the Tuberculosis Order in May, 1913, and, by reason of the additional work involved, my assistant was appointed a whole-time official and, with a clerk, we have been able to carry out the whole veterinary work required by the County and District Local Authorities. By arrangement with the Sanitary Authorities, we take note of the chief sanitary defects on all dairy premises, and these are handed to the sanitary inspectors, whose duty it is to enforce the necessary alterations.

The number of dairy cows inspected yearly is approximately 33,000 in fully 2000 herds. Some are inspected more than once, especially those supplying milk to Fever Hospitals, etc. I trust that very soon those who have the power in our county will provide that the milk of tubercle-free cows only will be allowed into our hospitals and sanatoria.

The dual appointment of veterinary inspectors under the Diseases of Animals Acts and Public Health Acts, means a considerable saving in expense to the County Council and District Committees, for it is a daily experience that we can conveniently accomplish the

duties of both appointments on the same journey. Moreover, in operating the Tuberculosis Orders, a large percentage of the animals dealt with are detected by us when doing herd inspection.

Other Public Health duties I have been called on to perform include the buying, or assisting to buy, examining as to soundness, and professional care of horses owned by the District Committees and engaged in scavenging districts and at Hairmyres Farm Colony. Reports on work of this nature are sent direct to the District Clerk. The farm-colony referred to is attached to a huge sanatorium for consumptives now in course of erection, and for some time we have been busy buying and tuberculin-testing Ayrshire stock of milk record pedigree, that will form a large herd for the supply of milk to the Sanatorium and some of the County Fever Hospitals.

The scope of public health veterinary work is certain to expand a good deal in the near future, and those of you who understand the obligations of County Councils will be able to imagine some of the other circumstances in which one committee or another will require the advice and service of their veterinary inspector.

I will now refer to the work which I do as an independent official responsible only to my Committee, to the County Council, and incidentally to the Board of Agriculture.

In contradistinction to our work under the Public Health Acts, which is almost steadily regular, that under the Diseases of Animals Act is greatly subject to variation in amount, and though they may be equally important there is usually an urgency about the latter that claims for it our first care, whereas the deferring of the greater part of our Public Health duty for a few days does not affect it materially. But, for the operation of the Diseases of Animals (Lanarkshire) Order of 1907, the work of veterinary inspection in the County is essentially the same as that of other Counties, the extent of it varying, as I have said, with the number of actual or suspected outbreaks of disease reported.

For some years prior to 1907 it was well known that many unexplained deaths of bovine animals occurred throughout the County which were not reported under the Anthrax Order, and as the carcasses of such were often interfered with and disposed of in various ways the danger of human infection from anthrax blood, the pollution of premises and of the further spread of disease among stock was very great. Recognising the need for an Order which would serve chiefly as a handmaid to the Anthrax Order for the more efficient detection of Anthrax cases, the County Council of Lanark, after repeated representation to the Board of Agriculture succeeded in obtaining the Diseases of Animals (Lanarkshire) Order of 1907. This Order at once made a considerable increase in Veterinary Inspection, and now after eight years its terms, for various reasons, are so well understood by stock-owners, butchers, slaughter-house superintendents and knackers, that it is very seldom we meet with a breach of it.

The terms of the Order are as follows :—

1. Every person in the County of Lanark having or having had in his possession or under his charge any head of cattle which is or has been suffering from any illness shall, with all practicable speed, give notice of such illness to the Local Authority, and if such illness has resulted in the death of the animal, that fact shall be stated in the notice provided that this Regulation shall not require notice to be given :—

(a) In the case of illness produced by, or consequent on, accident or calving ; or

(b) Where the illness is certified by a Veterinary Surgeon as not being cattle plague, pleuro-pneumonia, foot-and-mouth disease, or anthrax.

2. Such notice shall be given either by letter or post-card addressed to the Clerk to the County Local Author-

ity, County Offices, Hamilton, or by verbal intimation to any member of the Lanarkshire Constabulary.

3. Where it is proposed by the owner to bury the carcass of any head of cattle the intention to do so shall be stated in the notice, and the burial shall not be carried out until the Local Authority have had reasonable time in which to examine the carcass. What is a reasonable time shall depend upon the circumstances of the case.

4. Where the owner has disposed of, or intends to dispose of, the carcass of any head of cattle otherwise than by burial, the manner of disposal shall be stated in the notice required to be given under these Regulations.

5. Any person failing to give the notice prescribed by these Regulations, or burying the carcass before the Local Authority have had reasonable time for its examination in contravention of these Regulations, shall be deemed guilty of an offence under the Diseases of Animals Act, 1894.

6. The expression "cattle" in these Regulations means bulls, cows, oxen, heifers and calves.

Following our example, one county in England (Southampton) in 1909, and two in Scotland (Midlothian) in 1910, and Ayr quite recently, on the strong representation of Mr. Douglas, the county veterinary inspector, have secured Orders similar in effect and almost identical in terms to the Lanarkshire Order.

From my own experience of the advantages of the Lanarkshire Order, I am perfectly satisfied that great good would accrue if its provisions were made applicable to the whole country. The detection of anthrax cases and the control of the disease must continue to be faulty where it is possible for animals to die and their carcasses to escape veterinary inspection, as the following comparison shows. Mr. Douglas, County Veterinary Inspector for Ayrshire, in a recent report showed that although there were 108,754 cattle in the County, only 395 deaths had been reported under the Anthrax Order in five years, whereas in Lanark with a total number of cattle one third less than Ayr, nearly 1,100 cases have been reported and dealt with during the same period. It was by means of such figures that Mr. Douglas convinced his Local Authority that the need for the Order was not less urgent in Ayrshire than in Lanarkshire, and if I were to relate the history of some of the reported deaths in Lanark that proved to be cases of anthrax, you would see that, but for the requirements of the Diseases of Animals (Lanarkshire) Order, that they would have escaped notice altogether.

In all negative cases my only action is to make a microscopical examination of the ear blood of the carcass at the farm and instruct the owner to get the carcass disposed of. Having determined the absence of anthrax, I evade every approach made to get me to depart from the scope of my official duty. I make no post-mortem examination, and if the owner is anxious to know the cause of death, I advise him to seek the advice of his private veterinary surgeon.

We often find, of course, that the persons in charge have removed the carcass outside, and perhaps bled it, before reporting the case to the police and before the latter have the opportunity of serving Form C under the Anthrax Order. When this has been done the imminent danger of interfering with what is probably an anthrax carcass is fully explained, so that in similar subsequent cases the owner knows what precautions to observe.

When the case proves positive for anthrax it is at once dealt with under the Anthrax Order. Form C is at once served, if this has not already been done, a swab and smear of blood is taken for transmission to the Board of Agriculture in a special wooden fitment, the carcass is plugged and made ready for removal, and the necessary notes taken regarding the outbreak. Thereafter, I instruct the superintendent of police of the dis-

strict regarding the disinfection required. We never bury or burn anthrax carcasses on the farm now. For several years my local authority have had an arrangement with a horse-slaughterer for the removal and destruction of anthrax carcasses, and have provided him with a special galvanised iron box that fits his motor lorry. In this box he removes the carcass to the knackery, where it is put into a large digester, in which it is subjected for six hours or so to super-heated steam under a pressure of 50 lbs. per square inch. This reduces everything to a powder, a barrowful of residue being got from a large carcass, and this is thrown into a furnace and consumed. After each case, the lorry, box, etc., are disinfected. The circumstances of each case, and the result of the microscopical examination of the blood are reported to my committee.

I make one more subsequent visit to inspect the cattle and the premises, and see that disinfection has been efficiently carried out by the police, and, if everything is in order at the eighth or ninth day, I advise that the restrictions be removed. I do not suppose our mode of disinfecting premises would be of any interest to you. We usually rely on crude carbolic acid, the blow-lamp, chloride of lime and whitewash. In ill-ventilated dairy byres, deficient in cubic space, precautions are necessary during winter in the use of carbolic acid or chloride of lime in disinfecting the stall and its surroundings, in order to avoid contamination of the milk.

Upon such scheduled diseases as rinderpest, pleuropneumonia, sheep pox, etc., I need offer few remarks in these days of our immunity from them.

Foot-and-Mouth Disease. I have not seen a case since I was a youth, and my duties, as far as this disease is concerned, in the last five years have consisted in helping to devise measures to obviate the introduction of it into the county, and the examination, detention and isolation of such animals as are from time to time allowed into the county, and for which such measures of precaution are considered necessary.

Glanders. Cases are becoming very rare in Lanarkshire. Our most important outbreak for some years occurred three years ago in a lot of 36 Russian ponies, which were intended for pit purposes, and it was well that this outbreak was detected while the animals were in the dealers' hands, and before the ponies were distributed to the collieries. I destroyed 12 of the ponies, two being clinically affected, and 10 being reactors to the mallein test. On account of this outbreak and the menace to our pit ponies involved in the introduction of untested Russian ponies into our collieries, my Council made representations to the Board of Agriculture desiring them to legislate for the better control of the trade in Russian ponies.

Sheep Scab. We have had only six outbreaks of this disease in five years, and as our procedure is according to the Sheep Scab Order no comment is necessary.

Swine Fever. As you are aware, the Swine Fever Order has been Imperially administered since 1893, and the Board of Agriculture employ local practitioners to help their permanent officials. Police officials receiving notice occasionally report to me the death of a pig, but I refer them to the Board of Agriculture.

In Lanarkshire, as elsewhere, many pigs are fed on materials that have been suspected of producing anthrax in bovines, and although the last annual report of the Board of Agriculture and Fisheries shows that in the last four years the certified cases of anthrax in pigs average fully 60, I have no experience of the Board reporting to my local authority that the death of any pig in the county has been due to anthrax.

I often wonder whether, in the case of such sudden deaths in pigs as would presage the possibility of anthrax being the cause of death, the officials of the Board make microscopical examinations of the blood for the *Bacillus Anthracis* before proceeding to make

the usual post-mortem examination for swine fever. It is doubtful if even the absence of throat swelling precludes the need for examining the blood microscopically.

Rabies. On several occasions I have been called to see dogs that died or were killed, having shown symptoms of madness. In accordance with the requirements of the Board I make a post-mortem examination, send a report thereon to the Board, and despatch to their laboratory the head of the animal, steeped in glycerine, for investigation.

Parasitic Mange. We have dealt with a fair number of outbreaks under the Parasitic Mange Order, which is again in operation after a period of suspension owing to the war. Under this Order I issue and remove restrictions from my own office, sending copies of all notices served on the owner to the county clerk and the police superintendent of the district where the outbreak has occurred. In almost every instance, I have prevailed on the owner to get proper dressings for the affected and in-contact animals, as well as the necessary disinfectants from his private veterinary surgeon. They appeal to their private veterinary surgeon the more readily when it is explained that the use of efficient dressings shortens the period of detention.

Wart Disease of Potatoes. When the Order dealing with this disease came into operation I was appointed Inspector, and have dealt with one characteristic outbreak.

Prospective Work for the Veterinary Inspector:—

Epizootic Abortion and John's Disease. I suppose that we are all agreed that epizootic abortion and John's disease should be scheduled, and that veterinary inspectors could do useful work under Orders for their control. Some local authorities already possess certain power to deal with these diseases in their areas. No doubt, as soon as Sir Stewart Stockman has proceeded sufficiently far with his scientific research regarding these diseases, and is in a position to recommend reliable products and methods to stay their spread, he will at once move to promote the necessary legislation.

DISCUSSION.

The PRESIDENT: Gentlemen, I am sure we have all heard Mr. Begg's paper with very great pleasure and interest. We all hoped that when we had this meeting the war would have been ended, and we should have met under more favourable circumstances. We shall, I suppose, have to go on as we are, and probably after peace is declared each county will have its own whole time veterinary inspectors. The Lanarkshire Order Mr. Begg spoke of, I think, a proper thing, but I am afraid we could not get it here as yet. I thank Mr. Begg for his paper, and am sorry that the attendance is not much larger. The subject is now open for discussion.

Mr. A. D. MORGAN: I should like to ask Mr. Begg if he can advance any reason why anthrax should be so prevalent in Scotland. Mr. Lloyd as local inspector to the Board of Agriculture, receives a list every morning of the number of cases of anthrax and swine fever, and we notice that the number of cases of anthrax in Scotland is very large indeed, probably two-thirds of the cases in Great Britain occur in Scotland.

Mr. J. S. LLOYD: Mr. President and Gentlemen, We have not a very large amount of time, but I would like in the first instance to thank Mr. Begg for coming down and giving us a paper introducing the subject of "County Veterinary Inspection." It is a subject of which he has had exceptional opportunities of gaining knowledge. This Lanarkshire Order has been in force for eight years. It was granted by the Board of Agriculture as an experiment, and until I had the pleasure of reading Mr. Begg's paper (he sent me an advance copy a week back) I had no idea that any other authority had obtained the powers contained in it. I remember the

Order being made very well indeed, and I agree that I thought with our President that it was a step in the right direction. I quite agree that the procedure adopted by Mr. Douglas in Ayrshire showed the necessity for it, although, as our President says, we could not get it in the West Riding, but if somebody with sufficient energy were to take up the matter we should get it. I think our President would be a likely man. One question I would ask is—Do the veterinary surgeons get a fee for notifying under the Order as under the Contagious Diseases (Animals) Acts?

In discussing Mr. Begg's paper, I think we might give our attention for a few minutes to the branches of work that could be properly put into the duties of a county veterinary inspector, and whilst we are doing this to notice how they are done at present.

Contagious Diseases of Animals Acts. The veterinary work under the Diseases of Animals Orders is really only a small part of it. Under the Parasitic Mange Order the disinfections, etc., have to be dealt with by a veterinary surgeon. They cannot be dealt with by the police, but the police can go to see if the disinfection has been done. The making of the Order rests with the veterinary inspector. I do not think there is another Order where the veterinary inspector has to do that, and I think it is a great pity that it is not so.

Under the Swine Fever Order it is in the hands of the Board of Agriculture Inspectors. The lay inspector orders the disinfection, and leaves a form to be filled in when the work of disinfection, etc., has been done. The inspector again comes down a few days after the form has been sent in, finds something has been done, and the restriction order is removed. My experience is that in some cases the disinfection has not been carried out effectively, and when the pigs are again kept on the premises cases of swine fever again occur, even after an interval as long as a year. It has been proved in America that you can bury the virus of swine fever at the bottom of a river for months, bring it up, and infect healthy pigs.

Meat Inspection. Mr. Begg says that he does nothing with meat inspection, although the Public Health (Scotland) Act specially authorises veterinary inspectors to do meat inspection, but the work is done by sanitary inspectors and medical officers of health, who do not know anything about how animals are affected, with the result that people may be fined for selling meat as unfit for human food which may have been fit, and some food which is unfit is passed.

Dairy Inspection. This is in the hands of the medical officer of health and sanitary inspector, as administrative and executive officers respectively. Under the new Milk and Dairies Act the inspection of cows must be done by a veterinary surgeon instead of by the medical officer of health—a great advance upon previous Acts.

There is not the slightest doubt that there is plenty of work for the county veterinary inspector to do, and I contend that he should administer all the Acts and Orders with regard to Diseases of Animals, Meat Inspection, and Dairy inspection.

Mr. Begg mentioned that as far as he knew there is no county in England having a whole time veterinary inspector, but I think there is one, that is Cumberland. I think the Cumberland County Council appointed a whole time veterinary inspector some two years ago.

When County Councils were first formed, I think it was in 1894, the first thing they did was to appoint whole time medical officers of health and whole time county surveyors. There is a great deal of the work done, as far as medical officers of health are concerned, by local medical officers. In regard to county surveyors, I do not think local men were appointed, but district surveyors were appointed to assist the county surveyor and do the work for him. The duties of a county

medical officer of health or of a county surveyor are purely administrative, and for that reason I should like to see whole time veterinary officers appointed, if only in an administrative capacity. Local veterinary surgeons could deal with most of the diseases of animals in their own practices, provided the administration was in the hands of a county veterinary officer, and it would be, I think, a great advantage to many practising veterinary surgeons to do the veterinary inspection necessary in their own district whilst they were carrying out their own practice. I cannot see why it should not be done.

Mr. Begg dealt with the qualifications of the county veterinary inspector, and mentioned that men who were well up in conducting their own practice and had the confidence of their clients were the men most likely to get the births. I do not think if that were so that County Councils would be making any mistake, but it means the removal of a good practitioner from a district where he may be required. There is another reason; a man can gain more experience whilst in practice and acting as a part time veterinary officer than he could as a whole time veterinary officer. I think the men who have devoted themselves to practice for three or four years, go on to a University and take a post-graduate course and Diploma in Veterinary State Medicine or Veterinary Hygiene, and then take an appointment as assistant whole time veterinary inspector, are as good men as could possibly be appointed to county veterinary inspectorships.

Mr. Begg also dealt with tubercle-free milk. Before you can get that you have to get tubercle-free herds—that surely should be in the hands of whole time veterinary officers.

It is practically impossible for a county veterinary officer to work the whole of a county like the West Riding himself, and it means that he must have qualified assistants to deal with various districts. I think much of the work could be dealt with as well through the local practitioner as in any other way.

On the matter of testing with mallein, Mr. Begg mentioned that two ponies were slaughtered on clinical evidence and ten on reacting to the mallein test. I should like to ask if these ten were post-mortemed, and whether he found anything to confirm the result of the test. We have had very few cases in Sheffield, and I have been pleased to find that in cases which have reacted to the mallein test I have had no difficulty in confirming them on post-mortem.

Anthrax in the pig is, I think, very uncommon. I think there is only one source of infection, and that is, where pigs are turned out to eat the carcasses of animals that have died from anthrax. I remember a case where twenty or thirty pigs died with anthrax, and it was discovered that the beast they had been eating had died from anthrax.

As local veterinary inspector for the Board of Agriculture and veterinary inspector for the City of Sheffield, I may say that I do not make a microscopic examination before making a post-mortem examination of the carcass of a pig. I am, however, guided by the swelling of the throat.

I hold a similar position in Sheffield in regard to wart disease of potatoes to that held by Mr. Begg in Lancashire. I have never seen any diseased potatoes except the sample sent down by the Board.

I propose that a very hearty vote of thanks be given to Mr. Begg for coming down, and trust some of you gentlemen will join in the discussion.

Mr. T. C. FLETCHER: I should like to second the vote of thanks to Mr. Begg. I think that during the whole time I have heard papers read before veterinary meetings I have never heard a more masterful paper, and never heard a paper that has dealt with the subject so clearly and concisely as Mr. Begg has dealt with his

subject. I think the time of the whole time veterinary surgeon has not yet arrived, and the veterinary public and the Authorities will want educating up to it. I came here with an open mind as to the advisability as to which way to take. In the way Mr. Begg has put it one cannot but acknowledge it has enormous advantages. Mr. Begg's paper is not one that lends itself to much discussion, but I regret that the attendance is not greater, because I think that those who have not been here have missed a great treat. It will give some of us very great cause for reflection. There is nothing in it I should cavil at. Mr. Begg's proposed treatment of veterinary surgeons in districts in which whole time veterinary officers are appointed will be one which will require a lot of tact. I can imagine a young man, full of what I may call "nuts," being appointed, and in a short time the whole of the veterinary surgeons in the particular county to which he was appointed would be up in arms against him, and the work which he was supposed to do would be in a worse state than it was before anyone was appointed.

How Mr. Begg gets through the enormous amount of work that he specifies I do not know. I see the number of cows that he examines amounts to 33,000 per year. This is not in the application of the Tuberculosis Order, but for the finding of tubercle in milk. That, to my mind, is a weak point of the whole time veterinary officer. Even Mr. Lloyd and his assistant in the City of Sheffield, do not get round often enough to detect all cases of tuberculosis of the udder, and I know from my own experience that they very often miss tuberculous milk, and considering their energy and the smaller district, however one veterinary inspector with a clever assistant can get round 33,000 cows I do not know. I think this is a strong point in the argument against the appointment of whole time veterinary officers. The dividing line will have to be not a whole time veterinary officer for a county, but for districts. If that does come about, which will not be for years, there is no doubt that certain portions of the Acts or Orders will have marked increases in the working of them.

I thank Mr. Begg very much. I do not think I have ever listened to a paper which pleased me more, which was more concise, or which was better put before an audience, and I have great pleasure in seconding the vote of thanks.

Mr. S. E. SAMPSON: It is a matter of very great regret to me that I was not here to hear the opening part of Mr. Begg's paper. It appears to me that Mr. Begg should be a man who is able to express an opinion on the appointment of a whole time official. I gather he thinks it is a desirable thing for county councils to have whole time officials. Personally I think it would be a good thing if county councils would have whole time officials for districts, and so avoid over-lapping.

I do not think that private practitioners, as such, should be employed as county council servants. We know very well, those of us who are engaged in private practice only, that there are clients who will leave the private practitioner and go to the man who holds the official appointment and inspects the byres. I have seen it in many practices, and I also know a city in the North of England where a man has been appointed as part time officer and is allowed to practice, where many clients of other practitioners have gone over to the part time official. I think by having whole time officials this trouble would be done away with. Those of us who have to get our living by our own efforts, and hold no public appointment to bolster us up, would welcome the appointment of whole time men for smaller districts. I thank Mr. Begg for coming so far to read his paper.

Mr. G. GREEN: I listened with very great pleasure to Mr. Begg's paper. Perhaps I may speak as a part-time inspector.

I know that the usual idea is that a man cannot per-

form his duty as a veterinary inspector and also be in private practice. It just depends upon the man's personality, and whether he has any regard for professional etiquette.

I have been veterinary inspector for Rotherham for twelve years, and I can honestly say that during that time I have never come into opposition with any of my brother veterinary surgeons, I have never tried to poach on their preserves, and I cannot recall a single case where I have got a client through my appointment as part-time veterinary inspector. At the same time I can quite see that Mr. Begg and his assistant have a very big thing on. I cannot think that a county like Yorkshire, unless it could be divided into sections with a special veterinary inspector in each division, could be dealt with by the appointment of a county veterinary inspector. I take it that unless something is done, as in the case of Sheffield and Leeds, the veterinary inspectors would have to take a subsidiary place, or be deprived of their positions.

I like the idea of Mr. Begg for the removal of anthrax carcasses. It is the best method I have ever heard; but unfortunately I do not think we have a knacker-yard which would receive a box capable of containing a carcass.

I quite agree with Mr. Lloyd about anthrax in pigs. I do not think pigs are much affected with anthrax, although I remember an outbreak some years ago in which it was found that the pigs had been feeding on some foreign meal. I remember last year a case was reported as anthrax in a pig. I went over to see it. The symptoms looked almost identical with those of anthrax, in fact, the veterinary surgeon who reported it had taken a smear and was certain that it was anthrax. I also took a smear and thought it was too. However, I made a culture on potato and found that it was not anthrax. I think all the time I have been in Rotherham I have only seen one case in a pig.

Mr. S. E. SAMPSON asked Mr. Begg if the Lanarkshire County Council provide the motor for the removal of the anthrax carcasses, or whether the knacker provided it; also how the cost of removal compared with that of burying the carcass.

Mr. BEGG: The County Council pay the knacker a fixed fee of £1 1s. per carcass, irrespective of distance, and the cost compares very favourably with the cost of burial. The knacker provides the motor.

Mr. W. MURGATROYD: From the mild manner in which Mr. Begg described the fact of an owner opening an anthrax carcass, I should like to ask what proceedings, if any, are taken against the offender.

Mr. C. SECKER SMITH: Like Mr. Fletcher, I came to this meeting with an open mind on the question of whole-time county veterinary inspectors, and after having heard Mr. Begg's paper, I certainly can see that in the majority of points it is certainly beneficial that there should be county veterinary inspectors. No doubt the thing that will carry weight with the Authorities is the economic side of the question. At the same time there is no doubt that there will be a certain amount of opposition from the veterinary practitioners; but I certainly think that if the question is looked at thoroughly, and gone into, that it is certainly to the advantage both of the public and the general veterinary practitioner.

As Mr. Green remarked, it is generally considered that a veterinary surgeon cannot act as a veterinary inspector and general practitioner, and do both things as they should be done, especially the inspector's part. So far as I personally am concerned I am in rather a unique position, because in our little town of Barnsley the three veterinary surgeons in the town are real good friends. We all do anything for one another that we possibly can. If one wants to go away, either of the other two will take charge of his practice, and you will

see that in this way my duties as veterinary inspector for the borough become very pleasant, because in case I have anything reported to me from the other veterinary surgeons I can always go to them and obtain the full history of the case without wondering "Is he telling me everything, or is he trying to deceive me." I always know the information is perfectly reliable, and, therefore, it makes my work very much easier. I am sorry that this cannot be said in more places than it is at the present time. There is no doubt that there is a lot of jealousy, especially between the practitioner and the veterinary inspector, which I should like to see removed. I also wish to thank Mr. Begg for his paper.

Mr. J. S. LLOYD: Mr. Begg referred in his paper to 33,000 cows. I take it that Mr. Begg means that each cow has been handled. In dealing with Tuberculous milk in Sheffield—a lot of milk comes in by train and a lot by road conveyances, and the cows producing that milk are not controlled or handled—the only means we have of controlling the infection is by taking mixed samples. We take somewhere about five or six hundred samples of mixed milk per year, and we get a percentage in the beginning of 18 per cent. Now it is down at about 8 per cent. In that way we examine the milk of a very large number of cows, and in the case of the samples of milk that prove to be tuberculous we go out and examine the cows. I was wondering if it would not considerably help Mr. Begg in his inspection if the District Councils were to take samples and send them on to him or to the bacteriologist, and so direct him to the farms from which tuberculous milk is being supplied. If that is not already being done in Lanarkshire I think it may help him.

REPLY.

Mr. BEGG: Mr. President and Gentlemen, I must express to you how very highly I appreciate the way in which you have received my paper. It was a great pleasure to me to come down, especially as we, in the North, had a debt of gratitude to repay to Mr. Lloyd for similar services a few years ago, and I felt that in some measure that debt would be repaid by my coming here. As to not many being present, I may say that I am well used to that sort of thing. We have brought some of the very best of men to the West of Scotland, and the attendances at the meetings have often been far from satisfactory.

In the first place, Mr. Morgan asked why there are more cases of anthrax in Scotland than in England. I cannot, at the moment, substantiate what he has said, but probably it is quite right. The Board of Agriculture's mind on the subject can be seen from the questions they ask. They consider the cause is usually the artificial feeding stuffs. If you take away Aberdeen, Perth, and Forfar, you will find very few cases occur in Scotland. It is a pity we cannot determine in the foodstuffs the anthrax germs. In no case have we succeeded, though we have made many experiments in our laboratory in Lanarkshire.

With regard to the handling of so many cows. Mr. Fletcher mentioned that one of the weaknesses in the appointment of the whole-time veterinary officer was that 33,000 dairy cows could not be well handled by one man. I should rather say that that is one of the strongest reasons for the appointment of whole-time officers with assistants to ensure the proper inspection of the cattle. We hope in Lanarkshire that in doing what we have done under the Milk and Dairies Acts we have at least done as well as any other county. Our visits have had the further result of bringing owners up to the scratch from the sanitary point of view. We very often have the opportunity of advising owners to get into touch with a veterinary surgeon to obtain disinfectants and dressings for teat infections, etc. I can assure you that in Lanarkshire there is an immense amount of dis-

infection of udders done that would not have been done if it were not for our visits.

Mr. Lloyd has asked about mixed samples, and I am sorry we do not take any mixed samples of milk. There is no doubt that the taking of mixed samples, and the following up to try and determine what animals are yielding tuberculous milk, is one of the best steps towards the elimination of the dangerous cow. It is to be expected that the Tuberculosis Order and the Milk and Dairies Act will have the effect of eliminating tuberculous animals to such an extent that the number of positive milk samples will be greatly reduced. We may bye-and-bye get so far as testing with tuberculin and slaughtering out.

Mr. Lloyd spoke of the fees to veterinary surgeons. Of course, there is a special Order, the "Animals (Notification of Disease) Order of 1910" for Local Authorities to pay a fee of 2s. 6d. to veterinary surgeons for each notification, just as they pay medical practitioners for notification of human infectious diseases.

Someone made reference to the swine fever virus. I heard the other day that it thrived in a two per cent. solution of carbolic acid.

I think your English Milk and Dairies Act is inferior to the Scottish Act. Under the Scottish Act, Local Authorities must appoint men to do the work, and whilst in Yorkshire it may be necessary to sub-divide the county into districts, each of those districts may I suppose be equivalent in size to Lanarkshire. The point I wish to make is that in Scotland as well as in England, instead of needing to sub-divide a county, it will be necessary in some cases for two counties to combine to support a properly paid man. Many of the counties are in the same position as Lanarkshire in regard to size, and a good many of them will be able to pay a fair salary, and some of them a good salary. I think when it becomes known to the Local Authorities what are the advantages, economic and otherwise, of having whole-time men, they will appoint them.

As to Mr. Lloyd's question as to whether the ten ponies that reacted to mallein test showed post-mortem lesions of glanders. Of course one has to report on each case, and each of them showed lesions that were of quite recent origin.

Mr. Lloyd seemed quite sure that anthrax in the pig was generally caused by the animal consuming anthrax-infected bovine carcasses. Mr. Green said that anthrax was probably due to meal. That is what I have also thought possible. It has often occurred to me that when a dead pig is reported I ought to go and negative the presence of anthrax before allowing the police to report it through to the Board. It would seem we only look for anthrax in bovines and only for swine fever in pigs.

Mr. Fletcher wonders how we get through our work in Lanark. I have a motor car and can get about very well, even in winter time. It is surprising how much one can do with a motor car.

If I go to a suspected anthrax case I go right out and then take some dairy herds on the way home, always keeping in touch with the office through the police stations.

Although we do not do as much herd inspection as should be done, or as is done in burghs, there are other counties which have not done nearly so much as we have, and many have done nothing at all.

With regard to boroughs. We have in Lanarkshire a great many boroughs which have their own veterinary inspectors who do their meat inspection and public health work.

Mr. Murgatroyd asked how we proceed against the owner who spills the blood in a case of suspected anthrax. I lecture the owner very severely, even in negative cases, and report to my committee. The County Clerk is then instructed to write the offender

and draw his attention to the fact that it might have been a serious matter. If the case turns out to be positive, the police are asked to provide an information, and the case is taken into Court.

Mr. Fletcher asked if every case of illness among animals in Lanarkshire has to be reported. In practice we require notification of all cases of the death of bovine animals not due to accident or calving, or which cannot be certified by a veterinary surgeon as not being anthrax, etc., but we have power to demand notification of illnesses.

I must again thank you, Mr. President and Gentlemen, for the way in which you have received my paper.

The PRESIDENT then put the vote of thanks, which was carried with acclamation.

Mr. FURNESS moved and Mr. BEGG seconded, that a hearty vote of thanks be given to the President for occupying the chair. The vote of thanks was carried with applause.

The members then adjourned for dinner.

After dinner the members again assembled, and the Honorary Secretary exhibited a specimen showing very extensive swine fever lesions in a pig only 18 weeks old.

Mr. Hudson also showed a specimen (of peritoneum) from a horse which had been for some time badly infested by strongyle. The rest of the evening was spent in "talking shop."

J. S. LLOYD, Hon. Secretary.

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, August 6.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temporary Lieutenants:—

N. Brear. Dated July 14.

D. H. Wood, V. Boyle, H. V. M. Metivier. Dated July 19.

W. A. Macgregor. Dated July 20.

P. J. Turner. Dated July 22.

R. K. Porteus. Dated July 23.

C. K. Lomas. Dated July 24.

To be temporary Lieutenants:— Aug. 7.

F. D. Smith. Dated July 2.

S. H. Kisten. Dated July 4.

Temp. Lieut. B. M. Gunn is dismissed the Service by a sentence of Gen. Court-Martial. Dated July 25.

To be temporary Lieutenants:— Aug. 10.

S. G. Bright. Dated July 6.

J. D. Deyell. Dated July 13.

To be temporary Lieutenants:— Aug. 11.

B. A. Brown. Dated July 9.

R. T. Skilton. Dated July 10.

W. E. Armstrong. Dated July 19.

W. Walker, W. Harley, H. C. Rockett. Dated July 26.

A. C. Piesse. Dated July 27.

SPECIAL RESERVE OF OFFICERS.

Supplementary to Regular Units or Corps.

To be Lieutenants (on probn.):—

T. A. Dobie. Dated July 16.

G. E. Oxspring. Dated July 19.

P. R. Turner, R. J. Stow, W. Shipley. Dated July 21.

MEDITERRANEAN EXP. FORCE. ARMY VET. CORPS.

The following casualty is reported:—

DIED—Ptes. L. Oakley, 5534; R. Pingree, 4097.

MENTIONED IN DISPATCHES.

MEDITERRANEAN EXP. FORCE. NEW ZEALAND V.C.
Major C. R. Neale.

A.V.C. Sports at Bury St. Edmunds.

A successful athletic meeting took place on Thursday afternoon, August 5th, at Park Field, Newmarket Road, on the outskirts of Bury St. Edmund's. The use of the field was kindly granted by Mr. Mark Mayes. There was a large company assembled, and the events, which were well contested, were watched with keen interest. The musical ride by "the boys" was immensely popular, as was also the Victoria Cross race (mounted). The bare-back wrestling on horseback was another interesting feature of the proceedings. The officials connected with the sports were:—President, Col. Maxwell; vice-president, Captain Routledge; sports M.C., Staff-Sergt. Collinson; clerk to the course, Sergt. Spinks; official starter, Harry Douglas; judges, Col. Maxwell and Capt. Routledge. The band from the Depot of the Suffolk Regt. was in attendance (by kind permission of Col. Graham and officers), and rendered selections under the conductorship of Bandmaster Bertram Beale. Refreshments were provided by the President and Vice-President. About 7 o'clock Mrs. Routledge presented the prizes as under:—

120 Yards Flat Race—1 Pte. H. Palmer, 2 Pte. Hobson, 3 Pte. Briggs, 4 Cpl. Gibson.

60 Yards Sack Race—1 Pte. Pryke, 2 Pte. Kenworthy, 3 Pte. D. Smith, 4 Pte. Briggs.

Three-Legged Race—1 Ptes. Simpson and Doran, 2 Cpt. Gibson and Sgt. Bugg, 3 Ptes. Kirby and McElligott, 4 Cpl. Jackson and Pte. Halsey.

Relay Race—1 Ptes. Simpson, Lawton, Dixon, and White, 2 Ptes. Doran, Kenworthy, D. Smith, and Petts.

Potato Race—1 Pte. Hobson, 2 Pte. Dixon, 3 Pte. Halsey, 4 Sgt. Bugg.

Obstacle Race—1 Pte. Hobson, 2 Pte. McElligott, 3 Pte. Petts, 4 Pte. Briggs.

100 Yards Handicap for Men over 35—1 Sgt. Bugg, 2 Pte. Pryke, 3 Sgt. Porter, 4 Pte. Cadge.

Victoria Cross Race (mounted)—1 Pte. Carrel, 2 Pte. Dillon, 3 Pte. Lowry, 4 Pte. McElligott.

Bare-back Wrestling on Horseback—Won by Sgt. Feakes' Team.

Half-mile Handicap—1 Pte. Simpson, 2 Pte. Lawton, 3 Pte. Briggs, 4 Pte. Petts.

Bandsmen's Race—1 Bdsm. Shaw, 2 Bdsm. Barry, 3 Bdsm. Kubitzsch, 4 Bdsm. Pye.

Hat Trimming Competition for Officers (judged by ladies)—1 Lieut. Lloyd.

Best Turn-Out—Pte. Kenworthy.

Married Ladies' Race—1 Mrs. Demain, 2 Mrs. Wallace, 3 Mrs. Johnson, 4 Mrs. Faircloth, 5 Mrs. Fairhead,

6 Mrs. Bugg, 7 Mrs. Howe, 8 Mrs. Argent.

Single Ladies' Race—1 Miss Chinnery, 2 Miss H. Woodward, 3 Miss Baldwin, 4 Miss Lucas, 5 Miss Hamilton, 6 Miss A. Woodward.

At the close Staff-Sgt. Collinson thanked those who had contributed towards the funds for supplying comforts to the A.V.C. boys at the front; he announced that the sum collected in the boxes that afternoon was £3.

He called for three cheers for Col. Maxwell, and Capt. and Mrs. Routledge, and these were very heartily given. Thanks were also accorded Mr. M. Mayes for the use of the field.

Cheers were given for Staff-Sgt. Collinson, and these he acknowledged.

During the afternoon the humorous antics of the clowns—Harry Sander, George Robey, Blondin Donkey, and Nicky Leslie—provoked much amusement. In the evening dancing was indulged in, the M.C.'s being Cpls. C. H. Stone and Jackson.

Personal.

KING—SEWELL. On the 7th August, at S. Michael's, Chester Square, John King, the eldest son of the late John Samuel King and Mrs. King, to Alice, the eldest daughter of Mr. William Sewell, F.R.C.V.S., and Mrs. Sewell. Colonial papers please copy.

CARTY—HEDLEY. On the 7th August, at Palm Grove Wesleyan Church, Birkenhead, by the Rev. F. H. Harry, Samuel Wilfrid Carty, Lieut., A.S.C., M.T., second son of the late William Carty, J.P., Dunroo House, Sandymount, Dublin, to Maude Eleanor, only daughter of the late Matthew Hedley, F.R.C.V.S., Chief Veterinary Inspector to the Board of Agriculture, Ireland, and of Mrs. Hedley, Beesborough Road, Oxtou, Birkenhead.

McMASTER—RAINTHORPE. A military wedding took place at the parish church, Chapel St. Leonards, Lincs., on Monday, when Lieut. J. M. McMaster, A.V.C., (2/3rd Scottish Horse), stationed here, was united to Miss Emily Mary Rainthorpe, in the presence of a large number of officers and other friends. The bride's sister acted as bridesmaid, and Lieut.-Quartermaster Haws as best man. As the happy couple left the church to the strains of the "Wedding March," they passed under an avenue of crossed swords formed by the bridegroom's brother officers. A reception was held at the Vine Hotel. The honeymoon is to be spent at Ketsby Hall, the residence of the bride's father. The officiating clergyman was the Rev. E. W. Watson, Vicar.

STOCK VACCINES.

Sir,—In your issue of 31st July there was an interesting record of experiences with the use of *Streptococcus* and *Staphylococcus* vaccines. I have not used the vaccines in medical cases, but have used Stock vaccines in a considerable number of surgical cases such as fistulae—poll, withers, and quitters, also in a number of suppurating wounds, yet cannot recollect one solitary case where any improvement could be observed as a result of using Stock vaccines. The opinion of the writer is that anyone who neglects to do all that is possible surgically on the strength of trusting to the action of Stock vaccines will be sorely disappointed.

Aug. 10.

"OBSERVER."

CORRECTIONS.

On p. 68 of last week's issue the dates of the late Mr. C. Hartley's service on the Council, R.C.V.S. should read: 1892-1903.

In the note on the presentation to Mr. Sommerville, the Gorgie Abattoirs were inadvertently given as Glasgow; it should, of course, read: Edinburgh.

OBITUARY.

ROBERT F. SANDERS, V.S., Windmilland, Black Torrington, Devon. Died on August 4th. Aged 72.

Cruelty Sentence—Appeal.**R.S.P.C.A. Inspector censured.**

The Quarter Sessions for the borough of Croydon were held at the Town Hall on Saturday morning. The Recorder (Mr. R. F. Colam, K.C.) was accompanied on the Bench by the Mayor (Alderman F. Denning), the Deputy Mayor (Councillor S. Rogers), Alderman D. B. Miller, Dr. E. H. Willock, & Councillor Howard Houlder.

Two sentences of one month's hard labour each were appealed against by James Batters, aged 58, of Mount Street, Walworth, and Joseph Brown, of 52 Comers Place, Old Kent Road. The original charge before the police-court was, in the case of Batters, cruelty to a horse by working whilst in an unfit state; and against Brown of causing the horse to be so worked.

Mr. Curtis Bennett was for the appellants, and Mr. Douglas Bartley for the respondents.

On April 15th, Inspector Francis, R.S.P.C.A., saw Batters leading a mare down South-end, Croydon. He

stopped him, and found that the animal (in his judgment) was extremely lame; so much so that it had to be removed in a float. The horse had been bought that day, and Batters had been instructed to walk it to Brown's place in Old Kent Road.

Inspector Francis, called for the respondents, described the animal as very old, and in poor bodily condition. The lameness was due to chronic grease, and the leg was very greatly swollen. The Magistrates examined the animal the next day, and ordered it to be slaughtered.

Cross-examined, witness said he had with him a well-known veterinary surgeon, Mr. Carpenter, who had appeared for the Society in various cases, as also for the police. They watched the animal go by. Mr. Carpenter did not say he did not think it was a case of cruelty. He did, however, express the opinion that the lameness was slight. Witness then asked him to examine the horse, and he did so. Mr. Carpenter said, "I don't know what to make out of it." Witness himself was quite satisfied, and sent for the constable.

Mr. Curtis Bennett: Why was the whole of this examination kept back from the Justices?—There was no necessity for me to call him.

Mr. Curtis Bennett: Why weren't the Justices told what Mr. Carpenter had said and done? Why was he not called?—When I had called a constable the case passed into the hands of the police. I told the officer on duty at the Station that Mr. Carpenter saw the horse, and was quite satisfied about it.

The Recorder: Satisfied about what?—That it was a genuine case of cruelty.

Mr. Curtis Bennett: What, after what you have told us to-day!—The officer at the Station said, "we don't want a 'vet' in this case." Witness went on to say he did not call Mr. Wooff to give evidence, but the police did. When Mr. Carpenter said to witness, "Yes, it's a case" (meaning of cruelty), it was after the constable had arrived, and the horse had been standing. Witness quite expected police would call Mr. Carpenter.

Mr. Curtis Bennett: I put it to you that Mr. Carpenter was not called because he had told you first that you had no case, and afterwards said, "If there's a case at all, it is on the border line."—No, sir. Witness admitted that Mr. Wooff had given no evidence in any society local case for some months. He had been "dropped," and Mr. Carpenter had been employed the previous few months.

Inspector Bayliss, who took the charge, said that Francis mentioned nothing to him about a veterinary surgeon; nor did the witness say anything about a veterinary surgeon.

The Recorder: Did he say anything about Carpenter being present when he stopped the horse?—I have no recollection of him saying that.

The Recorder: Did you or anybody else in your presence say there was no need for a veterinary surgeon in this case?—No, I have no recollection of that. When the Inspector the Society reported a case to the police, the police took charge of it.

Answering Mr. Curtis Bennett, witness stated that if he had been informed that Mr. Carpenter had examined the horse he (Mr. Carpenter) would have been called as witness.

P.C. Aylett gave evidence as to being called by Inspector Francis, and in cross-examination stated that he was not an expert with regard to horses. He did not know when he was called that Professor Carpenter had examined the horse; if he had, he would have reported the fact.

Replying to the Recorder, the constable stated that he saw Professor Carpenter and Inspector Francis talking together, but he did not hear any part of their conversation. Professor Carpenter allowed him to use his office in order to telephone for the float. At the police station he heard nothing said with regard to Professor Carpenter having examined the horse.

Evidence was given by Chief Inspector Lovie, he

having not given evidence at the police-court proceedings. He explained that he sent for the veterinary surgeon, not in order to examine the animal, but to certify its slaughter. Nothing was mentioned to him with regard to Prof. Carpenter having previously examined the animal, otherwise he would certainly have called him to give evidence.

The Recorder: Because he was the man who had already seen it? Yes. He added that it would not be the duty of the Inspector who took the charge to send for a veterinary surgeon. When witness saw the horse on the day following that on which it was stopped it appeared to be in great pain, and from a wound there emerged matter mingled with blood.

Answering Mr. Bartley, the Chief said he considered it cruelty to keep the horse alive. In reply to Mr. Curtis Bennett he stated that the case was before the Court on three occasions, during the whole of which Prof. Carpenter's name was not mentioned.

Mr. Wooff, M.R.C.V.S., stated that the horse, a bay mare, was aged, in very poor condition, lame on the near hind leg, with the fetlock joint very much enlarged, caused by chronic grease. From a wound there was issuing a chocolate-coloured matter, tinged with blood. It could not put its heel down properly; it was obviously in pain, and totally unfit to travel.

Cross-examined: He had not had Society cases for some little time, recently having had to be away because he had been engaged to buy horses for the War Office.

Mr. Curtis Bennett: Would you agree that it would be important for a veterinary surgeon to examine, if possible, the horse as soon as it was stopped? Certainly.

Mr. Curtis Bennett addressed the Recorder on behalf of the appellant. He stated that he had to make a very serious complaint against an officer of a Society which they all knew did considerable good. He had often done work for the Society himself, and that made him loth to make anything in the nature of an attack upon it, but he should not be doing his duty to his clients if he did not complain in the strongest possible manner at an officer keeping back from everybody that an experienced veterinary surgeon of repute, who had been heard by the justices on many occasions, and who was relied on, had examined the horse and was kept back. Better evidence than his could not have been obtained, and it was kept from the Chief Inspector and Justices on three occasions, and he suggested that if that evidence had been heard the magistrates would never have convicted those men of cruelty. Why did Inspector Francis keep Professor Carpenter back? If Professor Carpenter was going to corroborate the Inspector's evidence did they believe he would not have been called?

The Recorder stated that he had no doubt that had Professor Carpenter been called before the magistrates they would not have committed the men to prison, and he should not support that decision.

Mr. Curtis Bennett stated that had the magistrates fined the defendants there would have been no appeal.

The Recorder, however, stated that he wished to hear Professor Carpenter, and the Professor entered the witness box. He stated that he met Inspector Francis on the evening in question, and watched the horse proceeding for about two hundred yards. When the Inspector stopped the animal witness examined the horse very carefully and thought that the Inspector had no case for cruelty. There was no sign of pus on the horse.

The Recorder: Do you mean that there was then no sign of discharge or that, in fact, there was no pus? There was no pus.

The Recorder: In justice to yourself, Mr. Carpenter. You have heard the evidence of Mr. Lovie and of Mr. Wooff, who said there was actually discharge. That could not have formed in the night. I want you to do

yourself justice; you have not misunderstood me. If you tell me that you formed the opinion that there was no pus there that day I shall have to try to reconcile that with the statements of both Mr. Lovie and Mr. Wooff that there was discharging of pus the next day.

Professor Carpenter: On the outside of the fetlock there was a wound about the size of a five-shilling piece which was probably caused by a chain barrow. It was not discharging pus. Proceeding, witness explained that he told Inspector Francis that he had not a case, and afterwards if he had that it was just on the border line.

Answering the Recorder, witness stated that did not remember speaking to the constable.

Cross-examined: Professor Carpenter stated that before the case came on for the third time he received a communication from Mr. Dagg (Defendant's solicitor).

Did he ask you to give evidence?—Yes, he did.

What did you say?—I told him what had happened.

Did you tell him about the horse?—I told him exactly what I have told the Court.

And he knew that before the case came on for the third time?—Yes.

The Recorder: It seems to me that both sides were afraid of this evidence.

Mr. Bartley: You were not subpoenaed to appear?—I said I work for the Society and I can't have anything to do with the case.

The Recorder: I think that a very improper remark to make. That's the spirit which goes to the root of all these cases. It is very improper; the profession should be willing to faithfully and truly give evidence whenever it is wanted. A great tradition of the profession was laid down by a famous veterinary surgeon who refused even to tell what his evidence was until he entered the witness box.

Mr. Curtis Bennett: It is what comes of the Society going to the same man time after time.

The Recorder: I agree. They ought to go to a different man each time.

Cross-examined with regard to the condition of the horse, Mr. Carpenter said the pus could not have been there on the following day.

The Recorder: Oh? Mr. Carpenter. Can you, as a veterinary surgeon, say that?—I examined it carefully, and I examined it twice, and I am prepared to say that except for the one wound I mentioned, there was no pus and that one was not discharging.

The Recorder: What was the light chocolate-coloured matter tinged with blood?—It didn't exist.

The Recorder: You see, Inspector Lovie and Mr. Wooff say there was discharge. Are you in the face of that to say there was none?—If there had been—

The Recorder (firmly): Don't you see, Mr. Carpenter, they do not say that on the day you saw the horse there was discharge. They say that on the next morning there was. Are you prepared to say there was no discharge the next morning because you saw no discharge when you examined it?

Witness made no audible reply, and when the Recorder asked him if he wished to withdraw his statement that conflicted with the evidence of Chief-Inspector Lovie and Mr. Wooff he made no reply.

The Recorder then gave judgment. He stated that he had no doubt that the horse was unfit to travel. He was very doubtful whether under the old statute he could have convicted Mr. Brown, but he could under the statute as it had recently been amended in order to deal with such cases. He was satisfied that Mr. Brown came within the words of the statute which made him liable to a fine, but not under those which would entitle the magistrates to sentence him to imprisonment.

As regarded the man who drove the horse he might possibly have come within those words, especially as he had driven the horse two miles, but having regard to

Mr. Carpenter's evidence he was in doubt as to what signs the animal showed of its lameness. Therefore he should deal with his case in the same way. As he was a servant acting under orders he did not regard the case against him with that seriousness as he did against Mr. Brown.

I am very sorry indeed, especially having regard to the large experience I have had with this class of case, to have to say what I am about to say. I do think that Inspector Francis—I hope it is only a temporary lapse—has not behaved well in this case; I think it is perfectly obvious now that although Mr. Carpenter was apparently willing to be of some service if called upon to support Inspector Francis to some extent, Mr. Francis knew that he could not altogether rely upon what he was going to say, and therefore he did not tell the police that Mr. Carpenter was a witness, and if he did tell them, he told them that which was untrue: that Mr. Carpenter was satisfied he had a case. Mr. Francis, to my mind, has in the witness box said that which was untrue under stress of circumstances which made it necessary for his defence to say that which was untrue, and that is a deplorable state of things. I very much regret it. He was an officer otherwise worthy of trust, and I hope this will be a lesson to him and to all prosecutors. Prosecutors, whether police or not, ought to feel it their duty to place the case absolutely impartially before a tribunal. If Mr. Francis had felt that that was his duty he ought to have told the Chief Inspector that Mr. Carpenter was doubtful about the case. If he had done that he would have done his duty. He did not do it. That being so it is quite obvious that the magistrates were not in full possession of all the facts. I do not think that would have made the slightest difference

to their view as to the fact that the horse was ill-treated. It suffered, and it was wrong to travel it. It would have made a serious difference in their opinion as to the responsibility of the two men if they were told that they were only doing that which a veterinary surgeon was doubtful about, and they might therefore have said: "We think this is a case where there ought to be a conviction," but in view of this fact that whatever Mr. Carpenter now thinks he at first thought doubtful, they would not have sent the men to prison. There had been an appeal, and the conviction was right in a sense, and in a sense was wrong. I am of opinion that Mr. Brown must pay £10 and the costs of the appeal, and the other man must pay 40s. and no costs.

Mr. Curtis Bennett asked that each side should pay its own costs. They would not have appealed against the conviction if the penalty had been a fine.

Mr. Bartley: I am instructed, after the words you have uttered, sir, not to apply for costs.

The Recorder thereupon made no order for costs. He added: I have had to say something very strong about Mr. Francis, and I don't think it was a bit too strong, but I do not want it to affect him too much in the future. I think the matter can be dealt with by the Society. But in the circumstances a very serious offence has been committed against the sanctity of the oath.

Mr. Bartley endeavoured to speak a word on behalf of the Inspector, but the Recorder interrupted him with the remark: The trouble is that when cross-examined about it he deliberately said "I told the police that Mr. Carpenter was satisfied." That's what I regard as a very serious offence, and nothing you can say can modify it. It is contradictory to the police, Mr. Carpenter's and his own evidence.—*The Croydon Guardian*.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.		Outbreaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended August 7	7	7			3	4	12	29		65	226
Corresponding week in											
{ 1914 ...	12	13			2	2	8	9		51	670
{ 1913 ...	10	11			1	3	27	34	1	41	632
{ 1912 ...	8	10	3	26	7	7	29	63	4	43	935
Total for 32 weeks, 1915 ...	400	458			35	63	‡547	‡1200	159	2812	12586
Corresponding period in											
{ 1914 ...	494	535	11	74	70	214	1511	2622	150	2650	28188
{ 1913 ...	361	395			108	284	1846	3744	125	1573	21352
{ 1912 ...	545	621	63	410	117	223	2298	5017	170	2114	27531

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked: Kent 1, Lincoln 1, London 1, Middlesex 1.

Board of Agriculture and Fisheries, August 10, 1915.

‡ Figures for nineteen weeks only.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.		Outbreaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
IRELAND. Week ended August 7	...	...	...	...	...	...	...	...	2	2	13
Corresponding Week in											
{ 1914 ...	...	...	...	...	...	...	1	4	4	2	8
{ 1913 ...	...	...	...	...	...	...	1	1	1	5	19
{ 1912 ...	...	...	...	3	...	...	1	...	...	6	15
Total for 32 weeks, 1915	1	1	...	...	1	3	46	270	165	926	
Corresponding period in											
{ 1914 ...	1	1	76	957	...	...	56	379	144	720	
{ 1913 ...	...	...	...	...	...	...	94	353	103	609	
{ 1912 ...	3	3	16	203	...	...	50	262	167	1436	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, August 9, 1915.

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

THE VETERINARY RECORD

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FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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NEMATODES AND DRUGS.

Prof. Craig's comprehensive paper upon this subject raises a broad question that must often have been in the minds of all thinking members. Despite the diligence with which the profession has devised prescriptions against nematodes for generations, how much progress has been made? Are there not still many diseases due to nematodes for which a satisfactory direct medicinal treatment has yet to be found?

The answer is not encouraging. On the whole, very little solid therapeutical advance against nematodes has been made in our time. Some nematodes, such as the equine and canine ascarides, can be successfully dealt with by drugs. But in the case of a great number of others, including many of those which cause the most serious economic losses, it is more than doubtful whether any anthelmintic treatment is of value. More than this, it is not clear that any great future advance can be hoped for. The more closely the difficulties of dealing with such parasites as the abomasal and intestinal strongyles of ruminants or the equine sclerostomes are considered, the less likely does it appear that any very successful anthelmintic treatment against them will ever be discovered.

It would be well to admit all this; for in doing so we do not admit veterinary science helpless against disease from nematodes: we simply concentrate ourselves upon those resources which we know to possess value against nematodes. Anthelmintics seem of little or no use against many, and for these it were better to discard them. But good feeding and tonics will do much good, in cases not too far advanced; and preventive measures will do even more. Veterinarians who appreciate this can still do much valuable work for the stock-owner, even if they have lost some of their old faith in drugs.

PARASITIC MANGE.

The Board of Agriculture's returns indicate that there is not much less equine mange in the country than there was when the Mange Order was suspended last August. Clearly the Order was not re-imposed too soon; and the practitioners should see that its provisions are enforced. Before the war, we were making steady progress against mange; but it must be confessed that that progress was somewhat slow. It will take us some time to gain the position we might have held but for the enforced suspension of the Order.

MILK FEVER BEFORE CALVING.

By J. H. PARKER, M.R.C.V.S., Faringdon.

Called last Wednesday to a big, fine, dual-purpose shorthorn cow, due with her third calf. Found her in a staggering condition, and she blundered down and nearly broke her neck. Showed symptoms of rapidly approaching coma, and about a yard of foetal membranes were hanging from the vulva.

A vaginal examination showed the presentation of calf to be normal, and as the passages were not fully dilated I left her to calve herself, which she did. We pumped the udder up and gave her a purgative.

Next morning she was clear in her head, but could not get up. Gave her another purgative, and the following day she was up and doing well.

INTERDIGITAL ABSCESES IN A SPANIEL TREATED BY VACCINE.

By HENRY TAYLOR, F.R.C.V.S., Haywards Heath.

The subject had been a patient sufferer from interdigital abscesses for over two years—abscesses which were much more painful and much larger than one generally meets with.

All surgical measures had been tried, with no result as far as the recurrence of them was concerned. The dog had been under chloroform several times, and extensive patches of skin had been removed, but this nor anything else made any difference. It was therefore decided to try the effect of a vaccine, and swabs were sent to Evans, Sons, Lescher & Webb, Ltd., of Crofton Lodge, Higher Runcorn, Cheshire, in order that they might prepare such. Their report was as follows:—

REPORT.

Cultivations made from this specimen have yielded cultures of the following organisms:—

Staphylococcus albus.

A Diphtheroid bacillus.

From these an autogenous vaccine has been prepared, of which six vials are sent herewith, each vial contains 1 c.c. and has 300 million organisms in all, made up of 200 million of the former organism, and 100 million of the latter organism.

H. E. ANNETT.

The vaccine was injected into the skin of the inside of the thigh, after painting the site of the injection with tincture of iodine. There were no constitutional disturbances nor any local swelling as a result in any of the six injections.

The dates upon which the doses were given were April 20, 26, May 3, 13, 21 and 29.

Apparently the vaccine had no effect in stopping the recurring abscesses, for they appeared with about the same regularity as before. As a matter of fact, since the injection of the vaccine, he once had *three* feet affected at one time, whereas previously he never had more than two. Further, there was no diminution in the size of the abscesses.

I have just set out the bare facts of the case, but seemingly the results are not encouraging. Perhaps someone would like to try on another case the effect of more doses. For the six doses the cost was only half-a-guinea.

ABSTRACTS FROM FOREIGN JOURNALS.

THE EXISTENCE OF ANTHRAX BACILLI IN BONE MARROW.

K. Grabert has published the results of experiments he has made to determine the length of time for which anthrax bacilli present in the bone marrow of animals dead of anthrax can resist destruction (*Zeitschr. f. Infektionkr. parasit. Krankh., und Hyg. d. Haust.*) The question is of great importance in the bacteriological diagnosis of anthrax.

Grabert examined the bones of 52 animals dead from anthrax—42 cattle and 10 sheep. The bones were preserved a long time, partly exposed in a room, and partly contained in a basket filled with earth. For examination the medullary cavity of the tibia was opened by sawing the bone transversely; and a piece of marrow about the size of a pea was removed and mashed in a fluid culture medium, from which two "passages of dilution" were then made.

Grabert succeeded in culturally demonstrating the existence of anthrax bacilli in the bone marrow six weeks after the death of the animal in one case, and four weeks after death in two other cases. In general, during the colder season, it was possible to obtain numerous colonies of anthrax bacilli, for the most part almost in pure culture, for from two to three weeks after death. After three weeks there were numerous negative cases, and after more than three weeks the result was doubtful.

During the warmer season, the culture test from bone marrow may fail a fortnight after the death of the animal.

The inoculation test proved itself, as has already appeared from similar experiments of Bougert and Fischöder, to be less worthy of trust than the culture test. In a fairly large number of cases, in which the bacilli in the medulla were few, the inoculation test yielded negative results.

Grabert concludes that the bacteriological examination of the bone marrow offers a certain means of demonstrating the existence of anthrax bacilli in many cases in which cultural tests from the viscera (spleen) and from the blood are negative.—(*La Clinica Veterinaria*).

THE SUSCEPTIBILITY OF THE PIG TO BLACK-QUARTER.

Arloing, Cornevin, and Thomas found the pig to be almost completely immune against black-quarter.

Afterwards, Marek, Born, Batristini, Willenberg, and others demonstrated black-quarter in the pig. Prof. Stefan von Rätz, of Budapest, has supplied further experimental evidence (*Allatorvosi Lapok*). He experimented with nine pigs, which he inoculated intra-muscularly with fresh muscle juice and muscle emulsion obtained from cattle dead from black-quarter. All the nine became affected. Seven showed a crepitant swelling of more or less volume at the region of inoculation. The other two went lame after the inoculation; and in one a general reaction also appeared. Three pigs died; and in two of these the characteristic appearances of black-quarter were found in the muscles.

The weight of the pigs ranged from 13 to 20 kilogrammes (= roughly from 28½ to 44 lbs); and the maximum amount of virus injected was 4 c.c. The experiments prove that pigs are not absolutely immune against intentional infection with black-quarter, that some even die of it, and that in these cases a sero-hæmorrhagic inflammation arises in the muscles which is just as severe as that seen in the muscles of cattle.—(*Berliner Tier Woch.*)

A TRYPANOSOME OF THE DOG,

Discovered in the Oran District of the Sahara.

C. Vialette has recorded this case.—(*Bull. Soc. Path. Exot.*, 1915, Feb. Vol. 8, No. 2, pp. 70-72). The animal in which the trypanosome was discovered showed a train of symptoms similar to those generally encountered in cases of trypanosomiasis, and in the later stages there was paralysis of the hind quarters. Examination of the blood on a number of occasions showed that the parasite was sometimes numerous present, sometimes in small numbers, and sometimes quite absent.

The trypanosome ranged from 17 to 24 microns in length, and from 1.5 to 2 microns in width. The free portion of the flagellum measured from 3.5 to 5 microns. The posterior extremity of the body was always more or less obtuse, and granules were frequently present in the anterior half of the body.

Experiments are being carried out with the object of identifying the parasite if possible; but the author appears to incline to the view that the trypanosome closely resembles, at least from the morphological point of view, *T. Soudanense* var. *berbera*.—(*Tropical Veterinary Bulletin*).

ointment of IODIDE OF POTASSIUM AND MERCURY.

Lanceleur has published the following formula for an absorbent mercurial ointment (*Revue vét. mil.*) Five grammes potassium iodide are rubbed up in a mortar and dissolved in a little glycerine, and, after solution, are mixed with twenty grammes of mercurial ointment. The preparation should be used when freshly made. For application, the hairs are cut off; and the ointment is first laid on with the finger and then vigorously rubbed with a hard tampon for a period of from three to five minutes. Twelve hours later small vesicles appear; but irritation is never present. The slight swelling

soon disappears; and the epidermis shrivels and becomes detached ten days later.

The ointment is especially recommended for hæmatomata of the knee and for "pressure swellings." Deeply situated cysts are cured with three or four applications; and, in cases of swellings of the tendons, better results are often obtained with this ointment than with sharp blisters. Its application may be repeated every sixth or seventh day. —(*Berliner Tier Woch.*)

W. R. C.

THE VETERINARY MEDICAL ASSOCIATION OF IRELAND.

(NATIONAL V.M.A.—IRISH BRANCH).

A general meeting was held on Thursday evening, 20th May, in the Gresham Hotel, Upper Sackville Street, Mr. WATSON (President) in the Chair. There were also present:—Messrs. Prentice, Howard, Wilkinson, Patrick, McShane, Loughran, Norris, Magee, Doyle, and Profs. Craig and O'Connor.

The HON. SEC. read letters apologising for inability to attend from Mr. Winter and Mr. J. P. Small, and a letter from Miss Mulcahy, sister of Mr. W. F. Mulcahy, stating that the latter died in November, 1913.

There being no objection, the minutes of the general meeting held in November, and of the annual general meeting held in January, both of which had been printed and circulated, were signed by the Chairman.

On the motion of the Chairman, it was decided that a vote of condolence be sent from the Association to Miss Mulcahy, the Hon. Sec. to state that the members were not aware of his demise until the intimation read that evening was received.

BENEVOLENT FUND.

The PRESIDENT: I suppose the majority of you gentlemen are subscribers to the Veterinary Benevolent Fund and have received a copy of the accounts for the year 1914. I think every member of the profession should subscribe to this very worthy fund. I do not know how it stands with regard to Ireland at present, but certainly up to last year beneficiaries received more from the fund than the amount of the Irish subscriptions. Is that the way it is?

The HON. SEC.: I fancy it is. Two received 10s. a week,—£52.

The PRESIDENT: We are not doing our duty even if we just exactly meet the disbursements. That would be rather a shameful proposition to live up to. I would advocate in all seriousness that we do our very best individually to get subscribers to this very excellent fund. (Hear, hear).

The HON. SEC.: As a member of the Irish Committee, I endorse what you have said with regard to this fund. It is a very good fund, and seeing how necessary it is, everyone in Ireland should subscribe. It is really a shame everyone does not. I hope that anyone who is not a subscriber will become one at once, as the fund is doing very good work.

Mr. WILKINSON: Are the subscriptions due now?

The HON. SEC.: Yes.

MR. MCKENNY'S RESIGNATION.

The PRESIDENT: At the last meeting a deputation was appointed to wait upon Mr. McKenny and ask him to reconsider his decision as to his resignation. Prof. O'Connor, Prof. Craig, and myself waited on Mr. McKenny, and used all our powers of eloquence, persuasion and logic with him, but I am sorry to have to

report that we did so in vain. Mr. McKenny was absolutely adamant, and could not possibly see his way to reconsider his decision. I am sure I am expressing the opinion of all the members of the Association when I say that it is a very serious loss to us. However, as Mr. McKenny has taken up this attitude it is a matter for the meeting to consider, that we shall have to accept his resignation with regret.

Mr. WM. CARGILL PATRICK: I propose that the Honorary Associateship be conferred on Mr. McKenny, an old, trusted, and worthy member of the association. He has been the hardest working member, and, indeed, the Association seems to have been the object of his life. Although we all may not have seen eye to eye with him now and again, it was due to one's own particular viewpoint. I know that Mr. McKenny was for the good of the Association on every occasion, and he is deserving of any honour the Association can confer on him.

Mr. PRENTICE: I second the resolution. Mr. McKenny will be missed, and will be a great loss to these meetings.

Mr. MAGEE: I would like to support that, and I cannot help feeling very glad that Mr. Patrick was the man to propose that such an honour be conferred on Mr. McKenny. As he said, we did not always see eye to eye with Mr. McKenny. Mr. McKenny never saw eye to eye with any member of the Association—and never will. No man agreed absolutely with the ideas of another. Mr. McKenny has many sterling qualities, and everyone has their little peculiarities. I am quite conscious of having my own. Certainly, Mr. McKenny was for the benefit of the Association. There is one remark I would like to make—probably no one in this room is more indebted to Mr. McKenny than I am, and I never let an opportunity pass of stating that. People often say that "there is no one that cannot be done without," but Mr. McKenny was an exception, for there were certain times in the history of this Association when he could not be done without, and were it not for him the Association would have been *non est* at the present time.

Mr. HOWARD: I think it is unnecessary for individual members of the Association to advocate this proposal, as it is the most sincere wish of every member—those who are not present as well as those who are—that Mr. McKenny should continue to be a member. I am sorry I was not one of the deputation. I would not have accepted his refusal. He would have to come back.

The PRESIDENT: The Roll of Honour of this Association contains many distinguished names. Perhaps our old friend, Mr. McKenny, is not a great scientist, but he certainly has great enthusiasm for the profession. He never hesitated for one moment to do what he considered was right and proper. In that he stands second to none. I am sure there is no one present but would be delighted to have Mr. McKenny's name on the Roll of Honour. (Hear, hear).

Is it your wish and pleasure that Mr. McKenny's name shall be placed on the list of Honorary Associates of the Association?

The resolution was passed unanimously.

REPORT OF COUNCIL.

A meeting of the Council was held of April 8th.

A letter was read from Mr. Bullock, Secretary of the Royal College of Veterinary Surgeons, enquiring what response had been made to the R.C.V.S. circular relating to members of the Association joining the A.V.C. The Hon. Secretary was instructed to write to Mr. Bullock, giving the particulars asked for, enclosing a summary of the replies received up to date.

The Hon. Treasurer was instructed to pay the account of the Gresham Hotel, the subscription to the Veterinary Benevolent Fund, and also to send a subscription to the National Veterinary Association according to the number

of members of the V.M.A.I. who had paid their subscription for 1914.

It was arranged that the general meeting be held in the Gresham Hotel, on May 20th, at 7.30 p.m. The subject for discussion to be Prof. Craig's paper on "The use of drugs in the treatment of disease caused by Nematode worms," as prepared for the 10th International Congress. Copies of the paper to be circulated with the notices convening the meeting.

Report of Council was unanimously approved and adopted.

PAPERS FOR DISCUSSION.

Mr. MAGEE inquired if it had been made a rule, as proposed by Prof. Mettam, that all papers be printed and circulated before they come up for discussion at the meetings.

The CHAIRMAN: I do not think it is a rule of the Association, but the suggestion has been acted upon. Notice of motion was handed in to that effect, but it was withdrawn on the understanding that the Association would reconsider the whole of the rules. It was thought convenient that everyone should have a copy of the paper before it was discussed.

Prof. CRAIG: Perhaps I may explain the circumstances in which this paper was printed. My reason is that the present paper is very much condensed, and I thought it would be better that it should be in your hands before you came to the meeting, so that any remarks you wished to make would have been thought over before any discussion took place, and it would then go on in a more lively fashion. Personally I would rather that you should read it than that I should have to read it to you.

Mr. MAGEE: Everyone knows the difficulty that the Hon. Secretary has in getting a paper for the meetings, even at the last moment, and the difficulty of having papers printed and circulated would be greater. Although it might be a splendid idea, to my mind it is not really workable always. Of course it is quite a different thing at the grand "pow-wows" of the International Congress. I was afraid it had been made a rule here.

THE USE OF DRUGS IN THE TREATMENT OF DISEASE CAUSED BY NEMATODE WORMS.*

By Professor J. F. CRAIG, M.A., M.R.C.V.S.,

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The class of nematode worms includes a large number of species which infest the domestic animals. Many of these species are extremely common parasites, but usually only cause disease when in large numbers and under certain conditions. As a rule, the most serious trouble is experienced amongst young stock. Some species often set up outbreaks of disease which may be likened to and in many cases are far more serious than contagious bacterial affections. As a rule, each species of nematode develops only in one, rarely two or more species of domestic animals. When taken up by its host it passes to and occupies quarters in certain specific situations. Frequently several species of worms are associated in the one animal.

The serious effects of invasion by these parasites vary very considerably and are frequently not characteristic. They may be local, depending on the position of the parasite, or general. The general symptoms associated with the presence of worms are unthriftiness, debility, and anæmia. Occasionally ascarides cause nervous symptoms. As for local symptoms, the nematodes in the alimentary tract may be responsible for diarrhoea. Ascarides occasionally cause impaction and even rup-

ture of the bowel in horses; in the respiratory tract the nematodes cause bronchitis and pneumonia. It must, however, be remarked that some species of nematode worms appear to produce no symptoms, and even although those which occasionally do so may be present in considerable numbers, the host may appear in excellent health.

This may be due to the method of action of these animal parasites in producing disease. They may act mechanically, produce toxins, or inoculate bacteria into the tissues of the host. Accumulating in great numbers in the intestines, ascarides may cause obstruction and by compression they may occasion even rupture and perforation of the bowel wall. In the bronchi and bronchial tubes strongyles may obstruct the passage of air. Penetrating the circulatory apparatus the embryos of filariae may cause the production of emboli and aneurisms. Provided with an oral armature, certain worms, such as ankylostomes and sclerostomes, injure the mucous membrane, suck blood, and inflict lesions which may be accompanied by hæmorrhage. Mechanical irritation may provoke reflex nervous symptoms, such as convulsions or epileptiform fits, in the hosts of ascarides, but these troubles may also be attributed to the action of toxins formed by helminths. Leroy has observed the perienteric liquid of the *Ascaris equorum* kill a dog in half to one hour in the dose of 8 c.c. to 10 c.c. per kilo body-weight. Weinberg and Julien injected the sterile liquid from the same source into the conjunctival sac and nasal chambers of horses and observed a marked local irritation in animals not carriers of ascarides, but the reaction was not shown by carriers, probably because they had acquired some immunity against the toxin. Hæmolysins and anti-coagulins have been shown to be developed in the bodies of certain worms, ankylostomes, sclerostomes, ascarides. In the *Strongylus equinus*, hæmolysin is present in largest proportion in the cephalic portion of the worm. It may be said that these agents are developed by the worms for their own use in dealing with the blood derived from their hosts, but it is probable that some toxins are absorbed. This is more likely to occur when the worms die, as in the case of *Bibothriocephalus latus*, and then anæmia, emaciation, etc., result. With reference to the inoculation of bacteria, Weinberg has examined the intact tumours of the *Spiroptera megastoma* of the horse's stomach and found numerous bacteria in them. Dionisi attributes the pulmonary lesions in sheep affected with *S. filaria* to *Bacillus oviscapitis*. Tricocephales, oxyurides, sclerostomes, spiroptera, which are capable of fixing themselves to the intestinal wall, inoculate the germs which adhere to the surface of their body. The ascarides favour infection by rubbing against the mucous membrane. Adult worms, their embryos or larvae, emigrating into the bile ducts, peritoneum, circulation, and different organs, transport bacteria with them. The results will depend upon the nature of the bacteria inoculated.

The action of nematodes is therefore not absolutely dependent on numbers and on depriving the host of its nourishment. The serious results produced by their presence depend upon the toxicity of the toxins manufactured by the worms, the susceptibility of the host, the mechanical damage the parasites may do, and the variety of the bacteria they inoculate. In the latter case, when the bacteria enter the tissues and produce disease they are the agents to which the attention of the clinician must be directed.

The first object in all treatment of disease is to remove the cause—in this case the nematode worms. The removal of the worms is brought about by means of anthelmintics. The anthelmintics commonly used are oil of turpentine, coal tar creosote, carbolic acid, lysol, empyreumatic oil, naphthalin, thymol, santonin, arsenious acid, potassium, antimony tartrate, common

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salt, sulphate of copper, sulphate of iron, areca nut, male shield fern, chenopodium, picrate of potash, kamala, koussou, quassia, oil of cade, carbon disulphide, asafœtida, eucalyptol, benzine, pomegranate, pumpkin seeds. The action of these drugs is to destroy or in some way affect the worms so that they are easily expelled from the body. They can thus only produce their effects when the worms are situated in a tube which leads to the exterior of the body. They do not act upon the nematodes in the tissues and their action is hampered when the worms burrow into the walls of the tube in which they live. Many of the drugs do not destroy the worms for a long time when in contact outside the body, and it is therefore probable that they only lower their vitality inside the body. Santonin, *e.g.*, does not destroy round worms; it would appear that it to some extent makes them drunk, so that they are no longer able to maintain their equilibrium in the intestine and they are swept out by the movements of the bowel itself or by the purgative medicine which has been introduced (Lauder Brunton). In the use of these drugs care must be taken not to use toxic doses, but a sufficient quantity and proportion to exert a direction action upon the parasites. None of the agents mentioned is absolutely specific for certain species of nematodes, and hence the various anthelmintics are employed, either singly or in combination, against all the nematodes, according to the tolerance of the patient, the cost, convenience in administration, their efficacy, or the idiosyncrasy of the practitioner. The mode of administration of these remedies is affected to some extent by the position of the parasites. The most common nematode parasites occupy some part of the alimentary canal or the respiratory tract. When dealing with the worms in the stomach or intestines it is necessary to have these organs as empty as possible by withholding food and water for twelve or twenty-four hours to allow the drug, without undue dilution, to come into direct contact with the parasites. The anthelmintic may be accompanied or followed by a laxative, the latter is usually unnecessary when there is diarrhoea. The difficulties attending the removal of the worms can only be noted when the particular cases are referred to. When the worms are expelled the symptoms will disappear, unless some serious damage has been done to the tissues of the host. In the latter case treatment often fails. On that account anthelmintics are, in many instances, only of service in the early stages of disease, in some cases even before symptoms are set up.

The second part of the treatment consists in counteracting the effects of the worms by a generous diet and a course of tonics. Some of the anthelmintics, such as arsenic and sulphate of iron, will act in this way. If diarrhoea is present, it ought to be relieved by astringents. A generous diet is a most essential part of the treatment, and is often more important than the drugs usually recommended. As a rule, parasites flourish more readily in the body of a debilitated animal. It may be that in debility the media furnished by the host are more favourable to the development of the parasite, or that in a stronger body antitoxins are formed which inhibit the development of large numbers of worms or prevent their effects.

A third part of the treatment consists in preventing reinfection or preventing infection of susceptible animals sufficient to produce disease. It may be taken as an axiom in helminthology that each worm in the body develops from an egg, embryo or larva, which has entered from without. Worms do not go on multiplying indefinitely within the host. Hence the degree of possible infection depends upon the amount of contamination of materials taken in by a susceptible animal. At pasture this is often associated with overstocking. Reinfection can only be prevented when the ports of entry and the life-history of the worms are

known. So far as we know, the large proportion of the nematode parasites enter the body with the food or water. In what way may drugs be used as preventative agents? In herbivora common salt should be added to the food or free access given to it. It will destroy some of the embryos or larvæ picked up, as well as stimulate digestion. Infection often occurs at pasture, and hence on infected lands the application of common salt or sulphate of iron in the proportion of 3 to 5 cwt. to the acre in the spring will be of service in destroying the eggs, embryos or larvæ which have survived the winter. When animals are known to have been exposed to infection, periodic doses of anthelmintic medicine should be given at intervals, even before the symptoms appear. This is a measure especially applicable amongst young herbivora. It is often successful with cattle, sheep and horses when they are grazing on infected pastures, especially low-lying, marshy lands, in preventing serious outbreaks of diseases due to strongylidæ and other worms. Indeed, it is attended with greater success than curative treatment when the symptoms of disease have been produced.

I shall now refer to particular cases according to the position of the parasites and in doing so will try to avoid repetition.

NEMATODES OF THE ALIMENTARY CANAL.

In equines one of the most common anthelmintics used is oil of turpentine in doses of 1 to 2 oz. It is given in the morning fasting, either as a single dose with one pint of linseed oil, or administered on two or three successive mornings in a pint of milk and followed by oil or other purgative. Potassium antimony tartrate is another good agent given in 1 to 4 dr. doses on several successive mornings in a mash of bran or in a little oats and then followed by a laxative, such as linseed oil or aloes 4 dr. and calomel 1 dr. A convenient method with foals is to give no water the evening before dosing, dissolve the drug in a pail of water and offer it in the morning before feeding (Grimme). If the diet is laxative, such as grass or bran mashees, a purgative may not be necessary. This drug is especially useful against *Ascaris megalocephala*, it is not always efficacious, but may be repeated, is safe and improves the condition of the horse. White arsenic in doses of 3 to 10 gr., together with sulphate of iron 2 dr., is also a good anthelmintic, given in the oats or in a ball each morning for seven days and then followed by a purgative. Copper sulphate in 1 to 2 dr. doses, given with a vegetable bitter in the same way as arsenic, is also very useful. Other drugs used include santonin $\frac{1}{2}$ to 1 dr. doses (this drug does not appear to be so effective in horses as in dogs), carbon disulphide 3 to 4 dr. for adults, $1\frac{1}{2}$ to 2 dr. for foals in gelatine capsules, given three or four times at intervals of two hours after starving for twelve to twenty-four hours and followed in twelve to twenty-four hours by linseed oil or aloes, carbolic acid, or lysol 1 dr. in a pint of milk daily for a few days, followed by a purgative, thymol 10 gr. to 1 dr., depending upon the age, in ball, or in suspension in milk, administered for three days and followed by a laxative and after an interval of four days, if necessary, continued again. In this country it is common to give a mixture of these agents in powder in the feed, or in a ball, *e.g.*, white arsenic 5 gr., sulphate of iron 2 dr., potassium antimony tartrate 2 dr., each morning for seven days, followed by a purgative on the seventh day. The agents are of very great service against *A. megalocephala*, which occupies the small intestines, sometimes the stomach and colon, but they may require to be repeated after an interval in larger doses. In some cases, however, the first symptoms produced by the presence of the worms in foals and young horses are those of impaction or rupture of the bowel. In the latter case nothing can be done to save the animal, and in the

former it is not easy to discover the cause of the impaction. Fortunately, a purgative often expels some of the worms. Of the nematode worms of the intestinal tract of the horse the most serious are the various species of the strongylinae (Sclerostomata), of which the types are the *S. armatus* and *Cylicostomum tetracanthum*. The adult worms inhabit the caecum and the double colon and are often attached to the mucous membrane. The larvæ are often embedded in the mucosa of the bowel and the *Strongylus vulgaris* in its larval form invades the anterior mesenteric artery and its branches to the caecum and colon, occasionally the coeliac axis and other vessels, causing endarteritis, aneurism, and thrombosis of these vessels. During the past ten years I have found these worms in the anterior mesenteric artery in 80 per cent. of horses. The adult Strongylinae in the bowel are very difficult to get rid of and certainly the larvæ in the bowel wall, and the *S. vulgaris* in the vessels is not acted upon by the agents we have already noted. Thymol was introduced in the hope that it might be of service, but it also only acts upon the nematodes in the bowel. An interval is allowed between the courses of medicine in the belief that the larval worms may pass from the bowel wall into the lumen. One reason that the action of vermicides is not very certain, even on the adult strongylinae in the caecum and colon, is that the agents given are partly absorbed before they reach these organs, and are very much diluted in the contents of these organs, which always contain a huge mass of ingesta, even after withholding food or fluids for many hours or days. Hence arsenic in its solid form is more likely to exert a vermicidal effect upon the worms than some of the other more soluble agents. To be of service anthelmintics must be used before acute symptoms set in or the disease is far advanced.

Occasionally an enteritis is set up by the worms of the tetracanthum group and death follows very rapidly, even before any treatment can be adopted, especially in foals and young horses. This may be the first indication of infection. When the larvæ are present in large numbers in the mucosa and submucosa of the bowel, anæmia, debility, emaciation, and even diarrhoea set in. Here not only have we to deal with a worm infection, but also an invasion of the pathogenic organisms carried by these worms, as indicated by Weinberg. Anthelmintics in these cases are of no use, better results will follow a generous diet—oats, hay, milk and eggs, and a course of general tonics, liquor arsenicalis, carbonate of iron, quinine sulphate, but even then the prognosis is not favourable. The lesions in the anterior mesenteric artery due to *Strongylus vulgaris* are occasionally followed by rupture of that vessel in young animals, and a fatal hæmorrhage results; sometimes large numbers of emboli are cast off and set up an embolic enteritis. In adults, however, aneurism and thrombosis of the mesenteric artery are frequently present without causing trouble, symptoms of colic which have been attributed to this cause can, as a rule, be prevented without any reference to these worms. Bockberg recommends in these infections in foals the intravenous or subcutaneous injections of atoxyl. In an outbreak which he dealt with among forty foals, eight died before treatment, and of the others twelve showed very marked symptoms of infection. The doses of atoxyl used varied from 3 to 7½ gr., in some cases as much as 15 gr. was given, and in one case 22½ gr., in 1 per cent. solution with 1 per cent. sodium chloride in water. Great improvement followed. Dorn recommends the intravenous injection of a 3 per cent. solution of atoxyl.

The Oxyurides, *Oxyuris curvula* and *mastigodes*, frequently infest the colon and rectum of horses. In the rectum they sometimes cause irritation and rubbing of the tail. The anthelmintics already noted given by the

mouth have no marked effect upon these worms; they may act as adjuvants. The most efficacious treatment consists of the use of vermicide enemata, such as a 5 per cent. solution of common salt, 1 per cent. solution of lysol, an injection of vinegar, soap and water, an infusion of quassia or tobacco (1 oz. shsg tobacco to 30 oz. water), perchloride of iron (Tr. ferri. perchlor. 1 to 2 oz. 2 quarts of water). One quart of one of these solutions is injected each morning for three or four days, after removing the faeces by hand from the rectum. The symptoms soon disappear. *Spiroptera megastoma* and *microstoma* are sometimes found in the stomach, the former producing small tumours in the stomach wall, although they produce no evidence of their presence during life. Major Martin, in Poona, noted a case of rupture of the stomach due to this cause. Spiroptera were almost constant parasites of equines in that region. On experiment he found that the worms were not dislodged or affected by anthelmintics; even arsenic in 20 gr. doses twice daily for three days had no effect upon them.

In ruminants Strongylidæ of a number of different species are parasitic in the abomasum and intestines, causing very serious symptoms of gastro-enteritis, with anæmia. Of the strongyles of the abomasum, among sheep the most common in this country are *Hæmonchus contortus* and *Strongylus cervicornis*, and in cattle *S. convolutus* (*Ostertagia ostertagi*) and *Strongylus gracilis* (*Tricho-strongylus extenuatus*). Some of these parasitic in the intestines are the *Strongylus ventricosus* (*Cooperia oncophora*), *Uncinaria cernuum* (*Bunostomum trigonocephalum*) in the small bowel and the *Sclerostomum hypostomum* (*Chabertia ovina*) in the large bowel of sheep and goats. Although some of these worms are common in ruminants of all ages, it is in young animals grazing on certain infected pastures that they cause disease, in lambs from three to nine months old, in cattle from six months to two and a half years. As to the action of vermicides on them, McFadyean, experimenting with specimens of the *Strongylus convolutus* isolated from the contents of the abomasum of an ox, observed that they were killed by a 1 per cent. lysol in five minutes, and after twelve hours' exposure to ½ per cent. lysol and chloroform water, but some only were destroyed in that time by 1 per cent. carbolic acid while in oil of turpentine 1 to 40 of milk, Fowler's solution of arsenic 1 in 40 of water, the worms remained active. Oil of turpentine is often used as the anthelmintic in these cases in doses of ½ to 1 dr. to a sheep in 1 oz. of milk, and 2 oz. to young cattle given in a pint of milk or gruel in the morning. Coal tar creosote is especially recommended by Stiles. It has given very variable results, and this may depend to some extent on its variable composition. In a 1 per cent. solution the doses are—For lambs four to twelve months old, 2 to 4 oz.; sheep one year old and over, 3 to 5 oz.; calves, 5 to 10 oz.; yearling cattle, 1 pint. One dose is said sometimes to be sufficient to effect a cure in sheep. Thymol in doses of 30 gr. to a lamb, 50 gr. to a yearling, 2 dr. to cattle, made into a paste with water and given in ½ pint of water to a sheep, or 1 pint to an ox, has given good results in the hands of some practitioners. It may be combined with creosote, and is repeated in a few days.

As the result of the experiments of McFadyean, already referred to, the hope was entertained that in lysol was found a specific agent, against Strongyles of the abomasum and intestines in ruminants. For young cattle the dose advised was 4 dr. in one quart of water, followed at intervals of two or three days by doses of 2 to 4 dr. In sheep half a pint of 1 per cent. solution has been given, followed by good results; but some owners assert that violent quivering of the muscles and immediate death may follow its administration. A common mixture used for sheep is R chloroform 10 minims, ol. tereb. ½ to 1 dr., lysol 10 minims, aquæ 2 oz.

given three or four times in a fortnight. Arsenic, in my hands, has given better results than other drugs, in cattle from 5 to 10 gr., together with 2 dr. sulphate of iron; in sheep, arsenic 2 gr., iron sulphate 10 gr., given daily for six days in oats or bran. Dr. Theiler has shown that 15, 30 and 45 gr. arsenic in single doses cause no ill effects in adult sheep, whether they are watered twenty-four hours after or immediately after dosing. In sheep this method of treatment has the advantage that no drenching or handling is required. Drenching of sheep is attended with some danger and difficulty in a large flock. Copper sulphate is another remedy which may be given either dry in the food or in 1.2 per cent. solution. In South Africa it has been recommended in a drench as a safe remedy in sheep. According to Dr. Thieler 22 gr. is a safe dose for an adult sheep, whether the animal is watered directly after the dosing or only twenty-four hours later. The addition of liquid to the copper sulphate increases the toxicity of the drug. It is used in doses of 4 gr. for lambs three months old; 8 gr. for lambs six months old; 10 gr. for sheep one year old; $\frac{1}{2}$ to 1 dr. for calves. Other drugs used are male shield fern, benzene, picrate of potash, Charbert's empyrumatic oil, and tobacco. In all cases before administration the animals are taken up and not allowed food or water for twelve hours. With all the agents used variable results have been obtained and recorded, and they do not appear to correspond with the experiments made with the drugs upon worms outside the body. This may be due to one of two causes. In the first place all drugs taken in by the mouth pass directly into the rumen and reticulum and mix with the ingesta there before passing through the omasum to the abomasum and intestines. It has been asserted by Stiles and others that agents given while the animal is in the standing position or by probang are carried directly through the oesophageal groove and omasum to the abomasum. That I have shown on several occasions to be quite an erroneous belief. Hence, drugs given in liquid form are diluted to a large extent before they can act upon the strongyles in the abomasum, and even to a greater degree in the intestines. Probably on that account I have noted quite frequently at *post-mortem* examinations large numbers of live worms in the abomasum of animals which have received vermifugal treatment. In the second place, treatment is often not commenced till the symptoms are far advanced and the tissues not likely to recover from the damage which they have suffered, even although the strongylidae are removed. Greater success has been attained in the treatment of disease due to *Haemonchus contortus* in sheep than in the case of smaller strongyles, probably because the latter penetrate into the glands of the abomasum. The smallest of the species thus often cause more severe losses than the larger species. Those worms which have entered the mucosa are not acted upon by the medicinal agents used. In cattle, tonics and astringents are administered after the anthelmintics, in order to relieve the symptoms of diarrhoea and anaemia. Reinfection is difficult to prevent unless the animals are taken up and housed. In all cases a generous diet, such as cakes and oats, is absolutely essential, and the measures adopted which have been noted in connection with the prevention of reinfection generally. Worm nodules in the intestines of native cattle and sheep, due to *Cesophagostomata*, are not observed in this country. As a rule, they do not interfere with the fattening of cattle and sheep, but in any case anthelmintics will only act upon the adult worms in the lumen of the bowel, they will have no effect upon the larvae in the worm nodules. Marotel and M. Velu have met with enzootics of *cesophagostomiasis* in bovines, due to the *Cesophagostomum radiatum*, in which the symptoms were similar to those of gastro-

intestinal strongylosis, and the mortality was great. No medicinal treatment proved of any service.

Ascarides are uncommon in the small intestines of ruminants in this country. They may be treated with success with any of the anthelmintics used for strongyles, and followed by a purgative.

In swine the most common nematode parasites are Ascarides (*Ascaris suilla* or *suum*). They develop in the small intestines, but occasionally pass into the stomach and bile ducts. In young swine one of the most common symptoms is convulsions, especially after feeding. A dose of 10 to 20 gr. of calomel is often sufficient to dislodge these worms. For sucking pigs, Bru recommends calomel given in milk, followed by castor oil; for older pigs on a mixed diet, decorticated castor meal $1\frac{1}{2}$ to 2 dr. associated with calomel, powder of male shield fern, wormwood and pomegranate seeds, then replaced by sulphate of magnesium or soda. The symptoms disappear rapidly. Extract of male shield fern (1 to 2 dr.), or areca nut (2 to 4 dr. for adults, 1 to 2 dr. for young pigs) given daily in the morning in milk or flour for a few days, and followed by a laxative such as calomel, or calomel and jalap, is also very useful. A similar form of treatment might also be tried in the uncommon conditions where a gastric catarrh is set up by the *Gnathostomum hispidum* or *Arduenna strongylina*. Reinfection is prevented by giving vermifuge medicines to all in-contact pigs, destroying the eggs and parasites in the manure by mixing the latter with lime, and disinfecting the styes and troughs with boiling water.

In the dog and cat Ascarides (*Belascaris marginata* and *Belascaris cati*) are extremely common parasites. They usually occupy the small intestines, but occasionally enter the stomach. In puppies only a few weeks old they frequently set up symptoms; but one must note that many puppies are dosed for worms when they are really suffering from distemper. Santonin is one of the best anthelmintics against these worms. It is given in doses of 1-8th gr. per lb. body-weight, but not more than 4 gr. should be given in a single dose. It is administered in pill with calomel ($\frac{1}{2}$ gr. to 3 gr.) or jalapin (1-8th to 2 gr.), or suspended in syrup of buckthorn (1 to 4 dr.) in the morning, after fasting for twelve hours. It may be repeated if necessary after an interval of three days. On account of the toxic nature of the drug great care must be taken in its administration to toy puppies; indeed, it should not be applied till the puppies are eight weeks old. Under that age a simple laxative may be given, which often brings away quite a number of worms. To the laxative 1 or 2 minims of oil of chenopodium might with safety and advantage be added. Other valuable drugs used are extract of male shield fern (8 to 60 m.) in pill or capsule, kamala ($\frac{1}{2}$ to 2 dr.) in milk, freshly ground areca nut (in the proportion of 2 gr. per lb. body-weight), in pill, capsule, or suspension in syrup of buckthorn, thymol (3 to 8 gr.) in pill or capsule, either accompanied or followed in one or two hours by a laxative. If the dog vomits the medicine it may be repeated in a few days, preceded by a stomach sedative such as bismuth carbonate or chloretone.

There have also been recommended cortex or pomegranate, pumpkin seeds and oil of turpentine. As a rule the drugs which I have mentioned are very efficacious. When an animal is affected with fits attributable to these worms, it is necessary to administer a course of sedatives, such as bromide, until the worms are got rid of. To prevent the worms in puppies it is advisable to give the bitch a dose of vermifuge medicine not later than the sixth week of pregnancy, and in addition to destroying the faeces and disinfecting the kennel, wash the mammary glands with a disinfectant solution. Ankylostomiasis in the dog, due to *Ankylostoma caninum* and the *Uncinaria stenocephala* which infest the small

intestines, appears to be rare in this country. In the cat a similar condition has been observed in Italy. The treatment employed is similar to that for *Ascarides*, but it is far more difficult to get rid of the worms on account of their attachment to the mucous membrane. Extract of male shield fern and kamala are specially recommended. Mègnin advises kamala in doses of 45 gr. to 1 dr. with 3 to 7 gr. of calomel and .075 to .09 grm. of arsenic. Thymol or eucalyptol might be useful judging from results obtained and ankylostomiasis in the human subject. A generous diet (milk, eggs, flesh-food), cod-liver oil and tonics are very necessary to counteract the anemia and debility. When the disease is advanced treatment is of little service. Animals frequently re-infect themselves, and it has to be remembered that the infection may occur not only through the food and water, but even through the skin (Cuillè). The kennel and food utensils must be thoroughly cleansed and the faeces destroyed.

In infection with *Spiroptera sanguinolenta* in the dog, or *Ollulanis bicupsis* in the cat, the condition is not diagnosed during life, and treatment is purely palliative, devoted to relief of the symptoms.

NEMATODES OF THE RESPIRATORY TRACT.

In the ass, occasionally in the horse, *Strongylus arnfieldi* (*Dictyocaulus arnfieldi*) infests the bronchial tubes, and in large numbers sets up a bronchial catarrh. It is probable that the same treatment employed for cattle might be equally beneficial for equines, but these parasites are often present in the ass without causing serious trouble. Among young cattle from six months to two and a half years bronchitis is caused by the presence in the bronchial tubes and trachea of *Strongylus micrurus* (*Dictyocaulus viviparus*), rarely the *Strongylus pulmonaris*. It is extremely common in this country towards the end of summer and during autumn in animals grazing on certain lands. The earliest methods of treatment consisted in giving agents by the mouth similar to those advised for gastro-intestinal strongylosis, such as oil of turpentine, creosote,assafoetida. It must be remembered that many cases of verminous bronchitis are complicated with the gastro-enteritis caused by the strongylidæ of the alimentary canal; indeed, in some outbreaks I have met with, the latter was responsible for a large proportion of the losses. On that account the agents given by the mouth are useful to deal with complications, and to some extent may destroy the larvæ of the bronchial strongyles taken in with the food. Oil of turpentine and other drugs are excreted by the lungs, but in too small a proportion to exert a vermicidal action upon the nematodes of the bronchial tubes. The administration of drugs, such as sulphuric ether and oil of turpentine, by the nostrils, does not appear to me to be justified by the results; the effects are similar to those produced by drenching, and the method of administration is objectionable. Fumigations were later introduced to combat the disease. The various materials used for the purpose included burning tar, rags, feathers, horsehair, sulphur, chlorine and iodine. In some districts sulphur dioxide and iodine are still used apparently to the satisfaction of the owner. For sulphur dioxide fumigations the calves are turned into a house in which all the openings are carefully stopped up, and sulphur burned on the floor until the operator can stand the fumes no longer. Then the burning of sulphur is stopped, and the calves kept in it for half an hour or until the calves show symptoms of dyspnoea. This is carried out on several occasions at intervals of one or two days. This method is not free from danger to the patient. With iodine inhalations each animal is treated separately. A small quantity of iodine is placed on a hot brick in a bucket enclosed in a sack, and the head of the calf covered with the latter. The inhalation is continued until the animal

becomes affected with a fit of coughing. The most popular form of treatment at present in vogue is that introduced by Levi, of Pisa, and consists in the intratracheal injection of anthelmintics mixed with glycerine, oil, or water. By this means the vermicides are brought into direct contact with the worms and embryos. Common mixtures are (1) Carbolic acid, 10 minims; chloroform, 1 dr.; ol. tereb., glycerine, aa 1 dr.; (2) olive oil, 10 parts; ol. tereb., 100 parts, carbolic acid, 2 parts. One dose is 2½ dr. The material is given by intratracheal injection every second or third day on two or three occasions. For the injection a strong syringe and needle are required. The skin over the trachea is best incised with a knife, and the needle inserted between the two tracheal rings in the direction of the chest. The material is injected slowly into the trachea, the head of the animal being kept elevated during the process to prevent the fluid flowing into the larynx. The agents used appear to act only upon the worms and embryos in the trachea and upper portions of the bronchial tubes. On one occasion I gave an intratracheal injection of one of the above mixtures to a calf evidently in a moribund condition. Two days afterwards it died. At the post-mortem examination the bronchial tubes were crammed full of living strongyles and their embryos, and there were also numerous strongyles in the trachea. Liquids injected into the trachea are rapidly absorbed, oil emulsions less rapidly than watery solutions, but they do not mix so readily with the mucus which surrounds the worms; hence the treatment requires to be repeated. Calves in a weak condition occasionally collapse after the injection, and when pneumonia sets in from the irritation of the embryos and the inoculation of bacteria, the injections are of no service. In those cases which recover on account of some strongyles being left the animal continues to cough for a time after treatment. In order to ensure that the anthelmintic mixture injected may reach the smallest bronchial tube and may thus come in contact with the worms and their embryos, Scheibel has introduced a spraying apparatus instead of a syringe. He employs first a special curved trocar and cannula, which he inserts into the trachea in the direction of the thorax. To the end of the cannula are attached two rings, by which it is kept in position during treatment by means of tape tied round the neck. After the trocar is removed the stem of a V-shaped spraying tube is inserted into the cannula. To the branches of the tube are attached indiarubber tubes, one in connection with the bellows for blowing in air, the other attached to the vessel containing the vermicide mixture.

The mixture he uses consists R creosote, 1 part; rectified spirit and water aa, 50 parts; dose 2½ to 5 dr. During the spraying process the vessel is held lower than the cannula so as to prevent the fluid flowing into the trachea. A pause is made when a fit of coughing sets in. The spraying is carried out daily for three days with invariable successful results. The method deserves a trial in this country. Intratracheal injections are not indicated when marked symptoms of pneumonia set in. The symptoms of the disease disappear with the onset of frost. As in all worm infections, a generous diet is of as great importance as the medicinal agents. In one outbreak in 1908 thirteen calves were affected; three died before treatment. I housed one of the most advanced cases, gave it no medicine, but allowed it 1 lb. of linseed cake per day in addition to other food; the others were allowed out, and were given intratracheal injections. All the animals recovered, and the untreated calf did as well as the others. It may be said, of course, that it was protected from further infection by being housed.

Among young sheep from three to nine months old a similar condition is set up by *Strongylus filaria* (*Dictyocaulus filaria*). This affection is treated in the same way as in cattle, but the doses employed are half to a

quarter less. Zieman recommends as an intratracheal injection a mixture consisting of equal parts of a solution of iodine (iodine, 2 parts; potassium iodide, 10 parts; water, 100 parts), and oil of turpentine and olive oil, to make an emulsion. The dose is 75 to 120 minims, and administered every other day on two or three occasions. It is difficult to apply the treatment to a large flock.

Lung lesions in the sheep, occasionally in the goat, are produced by the *Strongylus rufescens* (*Synthetocaulus rufescens*), and *S. Capillaris* (*Synthetocaulus capillaris*). In this country very few sheep are free from small dark nodules in the lungs due to one of these nematode parasites. Occasionally small patches of broncho-pneumonia are set up by the *S. capillaris*, but they do not appear to cause any serious disturbance. Very occasionally an acute pneumonia is set up, probably as the result of a bacterial complication. The infection in this case may be carried by the hay in animals which are housed. Intratracheal injections or fumigations can have no effect upon these diseases. Good feeding and stomachics, such as salt and sulphate of iron, are all that can be recommended. In young pigs in which a verminous bronchitis is set up by *S. paradoxus* (*Metastrongylus apri* and *M. brevivaginitus*) intratracheal injections are hardly admissible. Various mixtures containing assafetida are often given, but prophylactic measures are of the greatest importance, consisting of the destruction of the affected animals and the disinfection of the discharges and the pig-styes. The disease may cause no serious trouble. In cats, lesions in the lungs similar to those produced by the *S. rufescens* in sheep have been occasionally produced by *S. pusillus* (*Synthetocaulus abstrusus*). Intratracheal injections have been suggested, but are not likely to be of much service. In many species of birds a verminous tracheo bronchitis is set up by the *Syngamus trachealis*. Great mortality often results in chickens before they have got their feathers. One method of treatment consists in inserting a feather (from which the barbs have been removed save at the tip), through the mouth into the trachea, twisting it round, and pulling it out. Some of the worms may be removed from the upper portion of the trachea, especially if the feather is first dipped in oil of turpentine. This method is inadmissible with very small birds on account of the small size of the trachea. Good results have been obtained by intratracheal injections of a five per cent solution of sodium salicylate. 1 c.c. (15 minims) is introduced with a syringe either through the mouth or by a bent needle pushed through the skin into the trachea. The worms drop off the mucous membrane after the injection, and expelled by violent attacks of coughing. Fumigation with sulphur dioxide or tobacco smoke is not so useful. To prevent reinfection, 1 per cent. salicylic acid is added to the drinking water, the sick birds separated, and the runs, coops, etc., carefully disinfected by 1 per cent. salicylic acid or sulphuric acid, and the ground turned over.

NEMATODES OF THE CIRCULATORY SYSTEM.

I have already referred to the *Strongylus vulgaris* in the equines. Filariae appear in various parts of the circulation of the horse, ox, and dog. The treatment of these conditions is symptomatic and unsatisfactory. Pease observed considerable improvement in horses affected with *Filaria sanguinis equi* in India from the use of cacodylate of sodium. Perhaps this drug, or similar agents, such as atoxyl, might be of service in the conditions due to *Filaria immitis* and *Strongylus vasorum* (*Haemostongylus vasorum*) in the dog. In Egypt, Mason found no medicinal treatment of service in dealing with disease due to filariae in the blood of camels.

NEMATODES IN OTHER SITUATIONS.

The worms in the connective tissues are no more effectively dealt with by drugs than those in the blood. The tumours caused by *Onchocerca reticulata* in the tendons of horses can be removed only by excision, but Pader and Druin consider antiphlogistic treatment best. The tumours may disappear spontaneously. This also obtains with the periodic patches of hæmorrhage on the skin seen in Hungarian, Russian, and Tartary horses due to *Filaria hæmorrhagica*. If the affected areas are kept clean and undisturbed the disease spontaneously disappears. "Summer sores" in equines, caused by the *Filaria irritans*, are best treated by complete excision of the granulations, and the application to the wound of strong antiseptics, such as 30 per cent. copper sulphate solution, an alcoholic saturated solution of picric acid, a 10 per cent. to 20 per cent. alcoholic solution of salicylic acid. Rey recommends the application of arsenic sulphide. A dry scab about $\frac{1}{2}$ in. thick forms, which falls off after eight to ten days, and healing soon occurs. No satisfactory treatment is applied to the worm nodules caused by the *Onchocera gibsoni* in cattle. The treatment for *Filaria oculi* in the horse and *Filaria medinensis* in men and animals is purely surgical.

In cattle and other animals, conjunctivitis set up by varieties of thelaziae are successfully treated by first cocaineizing the eye and removing the thelazia with forceps, or by instilling 1 per cent. creolin or corrosive sublimate 1-2000 into the conjunctival sac daily for some days to get rid of the parasite. One may also have recourse to the prolonged irrigation to expel the worms. If the presence of *Eustrongylus gigas* in the kidneys or other organs is ever diagnosed its removal will be purely surgical; no drugs are likely to act.

DISCUSSION.

The CHAIRMAN: The first thing that strikes me is that the paper complies with all the conditions that Sir Joshua Reynolds lays down for judging a picture. He said that a picture should, not only show that it was well done, but that it was done with ease; I am perfectly certain that Prof. Craig's paper fulfils both these conditions. It shows that he is a master of detail, and he is not alone a genius in that way, but he has put a tremendous amount of hard work into his paper, showing the different doses and drugs, and the different ways in which they are to be compounded. For some time past I have thought the study of therapeutics was one of the lost arts, and that the books had been relegated to the lumber room. Prof. Craig shows that that is not so. Our old friend, Mr. John Holland always had a very strong idea against letting prescriptions be known to the chemists, and to people with dogs and horses particularly. He always considered it an element of danger to the practitioner. If that element of danger ever exists, it exists in *excelsis* in Prof. Craig's papers which give so many formula, which are only intended for our enlightenment. If we could do anything to stop these fellows getting the benefit of a magnificent paper like this, enabling them to make up these medicines it would be for the protection of the practitioner. I do not know, but it might be a difficult matter, but it would be well if something could be done in that direction.

Mr. CARGILL PATRICK: The subject for discussion is one especially suitable for this country, as parasitism is rampant from many causes: amongst them being the entire absence of tillage on large tracts of land on which all kinds of stock have been grazed for, probably, generations, resulting in a prolonged infection, or, where tillage might be impracticable, in a total lack of suitable dressings, which are often an absolute necessity and most beneficial to the stock, particularly with a humid atmosphere and very imperfect drainage. The

title chosen by the essayist almost begs the question whether drugs are indicated in disease caused by nematode worms or not, and the text even goes to prove how futile they sometimes are, a view in which I heartily concur; so much so that while treating these cases my routine practice is to build up the system as much as possible, which undoubtedly has the effect of augmenting the phagocytes of the blood, and these in turn prove inimical to the well being of any bacterial invasion caused by nematodes or otherwise. We are working along pretty much the same lines when we administer iron as a medicament, and many of the much vaunted remedies contain either iron or copper, gaining considerable credit as vermifuges according to the quantity of worms expelled after their administration, whereas it may be purely a coincidence. Every owner of horses knows that worms are often expelled in large quantities without any medical treatment and at all seasons of the year, probably due to several causes—digestive disturbance with unusual bowel activity, or, it may be the chemical composition of the food stuffs operating; or, again a spontaneous effort on the part of the parasites to gain new quarters. Yet it is to be admitted that we must practice the time honoured custom of giving medicine in these cases, if only for the sake of preventing our reputation being tarnished and our ledger accounts considerably curtailed, a somewhat humiliating confession; but in this age of charlatanism and advertising much tact is necessary.

I was much interested in the statement that "Ascarides occasionally cause impaction and even rupture of the bowel in horses," as I have never met with the condition, though I have seen impaction and enteritis from tapeworm infection in thoroughbred foals which, to all external appearance, were in perfect health. The nervous symptoms sometimes observed in these cases might be attributed more to the action of toxins formed than to mechanical irritation, though no doubt both causes operate. The toxin theory I have connected hitherto, and probably with a certain show of reason, with some of these locomotor ataxia cases, especially when they have responded to cathartic and electrical treatment. The rôle of these worms as bacteria carriers seems most serious, and for that reason a reliable vermicide, or even vermifuge, would be welcomed by most veterinarians, but so far no specific has been discovered for the various nematodes, the known or reputed drugs we use for this purpose seem less efficacious in the bowel infestations than in other positions of the body.

I note the essayist advised the use of astringents in cases where diarrhoea is present; this is surely an instance when removing the cause is the first essential, and astringents would be contra indicated. I am speaking advisedly on the point, having tried both methods and until the worms have been got rid of; astringents are useless in some cases. As to the various remedies employed in horse practice for bowel parasitism a good all round worm draught may be made up of linseed oil, turpentine, treacle, and new milk, administered fasting; or thymol and milk as suggested, though for the tetracanthus nothing short of intravenous injection of atoxyl have I found of the slightest service. Whilst on this point, I would ask whether any of the members present have noted any heart lesions afterwards which might reasonably be connected with said intravenous injections. Or is it more probable that they are the direct result of emboli produced by the worms under treatment. Personally, I incline to the latter view. For the *Strongylus micrurus* in calves, Penhale's injection of ol. tereb., acid carb. and chloroform seems most useful. Sulphur fumigations are too risky unless carried out under veterinary supervision, and this is not always convenient. Scheibel's apparatus seems most practical, and well worthy of trial for intratracheal medication. In the treatment of stomach worms I find tobacco very

useful in many instances. I think M'Fadyean recommends lysol in some cases as a specific.

I find mention of the use of carbon disulphide in the treatment of worms in horses. It is a very powerful drug and has to be carefully administered, particularly in the case of young horses; and in small doses, or you may have the animal die under treatment. There is usually more success in the case of smaller animals, probably owing to the facilities with which medicine can be administered, and the alimentary canal can be cleared out in a short space of time. With ascarides in smaller animals, medicine can operate with a great deal more certainty.

I wish to thank the essayist for the elaborate paper he has prepared, and trust that members present will give their experiences of various treatments, so that some practical outcome may result.

Mr. NORRIS: I regret to say I have not made a careful study of this paper which Professor Craig was kind enough to prepare for us. I have looked through it this evening, and will deal with the points which struck me as they occur in the paper. I may as well say at once that I believe drugs are absolutely useless in many cases of nematode worms. Professor Craig, in stating the various effects of nematodes on the system, does not mention the fact that a certain nematode was found to produce stomach tumours.

Prof. CRAIG: In rats!

Mr. NORRIS: Yes, some experiments on the point were made in Copenhagen some months ago and they were looked upon as a valuable contribution to cancer research. A far more important point for discussion than the drug treatment of nematodes is in the manner in which they produce their effects. Prof. Craig says "some species of nematode worms appear to produce no symptoms, and even although those which occasionally do so may be present in considerable numbers the host may appear in excellent health." In this I agree. But how are these two conditions to be explained. The same thing occurs in bacterial diseases, such as those produced by Gaertner's bacillus. Prof. Craig explains the pathological action of nematodes in several ways, such as mechanically producing lesions, elaborating toxins, aiding bacterial invasion. If they produce toxins in one case and thereby set up serious disease, why is it toxins are not produced, or, if produced, have no serious effect in other cases? In answer to this I suggest that the result may depend as much upon the condition of the host—whether it is in a state of immunity or anaphylaxis—as upon the presence of the parasites. Is it not possible for the host to automatically immunise itself if the parasitic invasion and the consequent elaboration of toxins are gradual; and on the other hand is it not probable that the defences of the host will be rushed if there is a massive and rapid invasion. With regard to the statement that nematodes aid and abet bacteria in the production of lesions, I think this theory so far has largely been taken for granted, and I would like some specific instance of disease proved to be due to the co-operation of these two agencies.

As I said before, I am an unbeliever in the efficacy of the drug treatment, and strongly hold that prevention is the line to adopt. I agree with Mr. Patrick—that if there were more tillage in Ireland there would be less parasitism. A farmer who breaks up his land frequently will have little trouble from this curse, but as older apparently healthy stock often harbour parasites they are therefore liable to infect young animals when grazing together even on clean ground. The ideal condition is to rear young animals on clean ground and apart from older stock of the same species. Prof. Craig speaks of dressing infected lands with 3 to 5 cwt. of salt per acre. This amount I consider is too small and more likely to give the worms an appetite than to have deleterious effect on them. I am rather surprised to find Prof. Craig

quoting a series of experiments carried out by M'Fadyean about twenty years ago, and which I believe are of little or no value. Shortly, the experiments consisted in putting live worms in watch glasses containing solutions of various drugs. Now I think this is a most unsatisfactory way to ascertain the effect of drugs upon worm parasites, chiefly for the reason that the worm is removed from its natural habitat and is therefore brought directly in contact with the trial drug in a very debilitated state, in an unnatural environment. I fail to see their importance, or that of any other experiments which are not carried out on the living animal with the parasite in its natural habitat and under natural conditions.

I agree with Prof. Craig that as a rule the smaller the species of nematode worms the more important it is from a pathological view. With regard to diagnosis, I am inclined to think sufficient use is not made of the microscope in examining faeces for eggs in case of wasting disease. It may be difficult at first to recognise the ova of the various species of parasites, but after some practice a useful knowledge is obtained which is very valuable in diagnosis of such cases. I do not agree that the common ascarides found in swine are a frequent cause of epileptiform convulsions in that animal.

In a ten years' experience, during which I have made some hundreds of post mortems, I am decidedly of opinion that intestinal parasitism in swine and convulsions do not hang together as cause and effect. The only case I can call to mind which might be attributable to parasites was one in young pigs, and the worm in that case was the *Trichocephalis* in the caecum. Convulsions in young swine, are no doubt pretty common, and appear to be caused by overeating, and indigestible food, causing gastritis and stretching of the stomach. I think the same remarks on drug treatment apply to the respiratory tract. Take the case of Hoose, a great number of animals will recover and are better without the application of drugs. Here, again, the proper remedy is not drug treatment, but prevention, and I think Prof. Craig agrees with me, because he is not very strong on advocating drugs in all cases, and in two or three places points out they are more or less useless. I do not think the new method of applying drugs advocated by some gentleman with a German name will prove more effective. Before I sit down I would like to mention a paper on much the same subject, read by Mr. Magee at a previous meeting. Briefly I may say I agree with the views expressed by Mr. Magee in that paper, and I think the fact that 80 per cent. of dissecting room subjects were found to harbour similar parasites without apparent injury, is not a strong argument against Mr. Magee's opinion.

(To be concluded.)

ON THE ANTISEPTIC ACTION OF HYPOCHLOROUS ACID AND ITS APPLICATION TO WOUND TREATMENT.

A series of experiments have been made, in the course of an investigation undertaken at the request of the Medical Research Committee, by Messrs. J. Lorrain Smith, M.D., F.R.S., Professor of Pathology; A. Murray Drennan, M.B., F.R.C.P.E., Professor of Clinical Pathology, University of Otago, N.Z.; Theodore Rettie, D.Sc., Research Assistant under Medical Research Committee; William Campbell, M.B., B.Sc., Lieut. R.A.M.C., Demonstrator of Pathology, (from the Department of Pathology, University of Edinburgh); and is reported in *The British Medical Journal* of July 24. The following extracts give the main statements. There are six pages of tables and results also given in the report which will be of interest to those desirous of following clinical details.

"The primary object of the investigation was to find an antiseptic which could be applied as a first dressing in the field to prevent sepsis.

The ideal antiseptic for the type of infection which occurs in wounds received in the field must possess the power of rapidly destroying spores as well as ordinary bacterial forms. There are two chief laboratory methods of investigating the action of antiseptics:

1. By testing their action in killing or preventing the growth of organisms on artificial culture media.
2. By testing their action in sterilizing infected organic matter.

We employed both methods, but especially the latter, as the conditions here resemble more closely those occurring in infected wounds containing much necrotic tissue or other organic matter.

It has been accepted, especially by those working at disinfectants for public health purposes, that the hypochlorites are among the most potent germicides. Rideal, using carbolic acid as a standard, expresses the germicidal power of hypochlorites as carbolic acid, 100; hypochlorites, 14,600 to 22,000.

Used mainly in the form of bleaching powder, the hypochlorites have been largely employed for sterilizing water supplies, but their use in general surgery as antiseptics has been very limited. As far back as 1846 Semmelweis stamped out an epidemic of puerperal fever in Vienna by the use of bleaching powder. "Eau de Javelle" (a solution of alkali hypochlorite), has been used with success in surgical practice.

The fundamental practical difficulty in the use of hypochlorites is that in solution they rapidly lose their strength by decomposition. In the case of Eau de Javelle this difficulty has been overcome by making a strongly alkaline solution; but this constitutes a new difficulty, in that such a highly alkaline solution cannot be applied to the tissues unless greatly diluted.

HYPOCHLOROUS ACID.

In our observations we found that hypochlorous acid is a more potent germicide than its salts, and we have accordingly devised a method in which the free acid is employed as the antiseptic agent. The acid may be used as a gas or as a solution in water.

For use as an antiseptic, the gas is most conveniently prepared by the action of boric acid on bleaching powder in the presence of a small quantity of water.

The solution is obtained when the same action occurs in the presence of a large quantity of water.

For convenience, we have given the name "Eupad" to a powder consisting of equal weights of finely ground bleaching powder and powdered boric acid intimately mixed; while the solution of free hypochlorous acid prepared in this way we have named "Eusol."

METHODS OF PREPARATION AND CHEMICAL NOTES.

To prepare the powder, ordinary commercial bleaching powder or chloride of lime is ground in a mortar to a fine powder, and then intimately mixed with an equal weight of boric acid powder. The mixture should be kept in closely stoppered bottles, and not exposed to light more than necessary.

The solution may be prepared by two methods:—

1. Twenty-five grains of Eupad are shaken up with 1 litre of water, allowed to stand for a few hours, then filtered through cloth or filter paper.
2. To one litre of water add 12.5 grams bleaching powder, shake vigorously, then add 12.5 grams boric acid powder and shake again. Allow to stand for some hours, preferably overnight, then filter off, and the clear solution is ready for use.

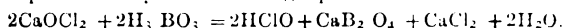
This solution contains :—

Hypochlorous acid	0.54 per cent.
Calcium bichlorate	1.28 ..
Calcium chloride	0.17 ..

1.99

The hypochlorous acid is estimated by titration with N/10 arsenious acid solution; this method is best, as the presence of chlorates does not affect the result.

The chemical reaction involved in the preparation of hypochlorous acid by the method described may be represented by the following equation :—



If the reaction takes place in the presence of a large quantity of water, a solution of hypochlorous acid is formed; if little water is used, gaseous hypochlorous acid is given off.

The hypochlorous acid in the form of a gas is more mobile, and will be absorbed by the tissue more rapidly and in larger quantity than from the solution; this will explain its greater efficiency as an antiseptic.

As the ultimate decomposition product in the tissue is hydrochloric acid or sodium chloride, there is no reason to fear toxic absorption from this antiseptic.

A concentration of 0.5 per cent. hypochlorous acid has been found the most satisfactory. Stronger solutions may be prepared by this method, but no advantage is gained, as they rapidly lose strength, coming down to about 0.5 per cent. free acid, after which they decompose more slowly; for practical purposes a solution of 0.5 per cent. remains effective for from three weeks to a month.

Andrewes and Orton found that very dilute solutions of hypochlorous acid have intense antiseptic properties. They showed that a suspension of *Staphylococcus pyogenes aureus* in pure distilled water was sterilized in one minute by the presence of one part of HClO in 100,000. In a suspension in broth 1 in 5,000 did not, but 1 in 3,000 did, kill the staphylococcus in thirty minutes. From this they concluded that the potency of the pure acid was so much diminished by the presence of organic matter that it was unsuited to ordinary use.

As a solution of 0.5 per cent. HClO may be safely applied to open wounds, the objection which Andrewes and Orton have based on experiments with very dilute solutions does not apply.

A series of experiments were done with anthrax cultures containing spores. An agar culture was emulsified with 5 c.cm. of normal saline, and equal amounts of Eusol of different strengths were added; 2.5 to 3 c.cm. of this mixture were injected subcutaneously, either at once or after periods of one to five minutes. Emulsions were also made with the Eusol alone, 5 c.cm. being used to wash off one agar culture, and 2 to 3 c.cm. of this injected subcutaneously. Controls were done with equal amounts of anthrax emulsion alone in saline, and with emulsions of anthrax in 1 in 20 phenol.

Even where the unfiltered emulsion was injected death was delayed as compared with the phenol experiments; death was due to the survival of organisms in the lumps. The experiments with filtered emulsion bear this out. Where phenol was used the animals died in every case, even although the phenol was allowed to remain in contact with the anthrax for fifteen minutes before injection.

These results are quite in keeping with the previous results of the action of Eusol on anthrax cultures, and they show that the organisms are killed, and have not merely their power of growth inhibited. Further, the spores are killed as well as the bacteria.

A microscopical examination of a drop of fresh blood mixed with an equal amount of 0.5 per cent. Eusol showed no obvious change in either red corpuscles, leucocytes, or platelets; at the end of a quarter of an

hour a finely granular precipitate appeared in the film, which became slightly opaque; the colour of the hæmoglobin was not discharged.

Further investigation is required to define the nature of the reaction which hypochlorous acid causes in the tissues. Although it kills organisms so rapidly, no disintegration occurs; and there is no apparent breaking down of tissue cells.

It is to be noted that hypochlorous acid tarnishes metals, and therefore instruments should be kept in a separate cupboard, and not left in the solution longer than necessary. It bleaches and destroys cloth fabrics if left in contact with them for a prolonged period.

An important point is that the ingredients are easily obtained, and at a very small outlay. The cost of making one gallon of Eusol is approximately one penny.

CONCLUSIONS.

Comparative tests confirm the conclusion already arrived at by various investigators that hypochlorous acid is the most powerful antiseptic known.

The advantage of using the gas is that it will penetrate and will act at a distance.

Both the gas and the solution, while extremely potent against organisms and their spores, cause little or no harm to the tissues.

The effect of this antiseptic is purely local; the decomposition products are devoid of toxicity, and there is therefore no danger to be apprehended from absorption.

A flow of lymph is induced from the wound as part of the reaction of the tissues.

Fætor is rapidly eliminated.

If pain and irritation occur they can be easily controlled by reducing the concentration of the antiseptic.

The practical advantages of this antiseptic for field use are :—(a) It can be used as a dry powder and therefore obviates the difficulty of procuring water. (b) It can be introduced into the gauze pad of the first field dressing. (c) Where water is available the same powder can be made up as a lotion for general use.

The constituents of the powder are inexpensive and easily procured; and the preparation of the antiseptic is extremely simple.

AUSTRALIA produces yearly wool to the value of £24,000,000, and its manufacture, when exported, gives employment, directly and indirectly, to about one million people. The value added after the wool leaves Australia is estimated to be about £50,000,000.

Personal.

CROWHURST.—On the 12th August, at Earls Place, Maidstone, the wife of Cecil Crowhurst, M.R.C.V.S., of a son.

Lieut. STANLEY H. L. WOODS, A.V.C., M.R.C.V.S., has been presented with the Freedom of the City of London.

Lieut. Woods was sworn in and signed the Roll on July 29th, at the Guildhall.

Mr. JAMES BORTHWICK, M.R.C.V.S., Kirkliston, who was referee for the H. & A. S. show, agreed to act, with Principal McCall and Mr. Wm. Brown, as veterinary inspector for the Cawdor Cup for the females at the show at the Edinburgh Agricultural Association.

Mr. J. A. HEPBURN, M.R.C.V.S., Milnathort, served as secretary to the show committee of the Kinross-shire Agricultural Society; and

Mr. W. FINDLAY HOUSTON, M.R.C.V.S., Paisley, was one of the judges for Light-legged horses.

Swine Fever—The use of Calomel.

One of the recent suggestions with regard to the treatment and prevention of swine fever is the use of calomel. It is contained in a report issued by two Italian investigators, who state that they have been very successful in the control of swine plague in the province of Arezzo, a district in which the disease has wrought great havoc for many years. The report continues: "In over 100 cases treated with calomel, not a single death occurred, while in infected control styes in some cases as many as 90 per cent. of the animals succumbed. The remedy appears to be most efficacious when it is administered before the disease is far advanced, and is best given on the first appearance of the symptoms. Its effect is doubtful in advanced stages of the disease. The doses which can be safely given per head are as follows: 1 gr. per dose for sucking and young pigs, 2 to 2½ grs. per dose for half-grown pigs, 4 grs. per dose for adult pigs. In the case of pregnant sows the dose is best administered in three portions within thirty-six hours. The calomel should be given in a boiled potato or in a meal of honey mash which is fed to the pigs. If after two or three days no marked improvement in their condition takes place, the same dose should be repeated or even given a third time. In no case was any ill effect noticed on the organism by so doing. Calomel was also given to healthy pigs in an infected sty, and it was observed that those animals did not fall ill, which proves that calomel is a prophylactic as well as a remedy."

Anti-Fly Dressing.

The following formula is suggested for a preparation to prevent flies from settling on men and horses:—

Pyridine	1 part
Thymol	½ part
Safrol	5 parts
Oil of Birch Tar	5 parts

Sperm Oil—sufficient to produce 100 parts.

The birch tar oil and safrol mask the odour of pyridine when applied, and, in conjunction with thymol retard its volatilisation. The fluid does not irritate the skin, and a thin film may be smeared on the temples, on the head behind the ears, and on the back of the hands.

This should be renewed every few hours, but when applied to leather less frequent renewal will be required.—*Pharmaceutical Journal*.

Dry Dressing for Wounds.

A powder consisting of one part of Chlorinated Lime and nine parts of Kaolin or Fuller's Earth is recommended for dusting wounds. It is said to be entirely harmless, while it deodorises, reduces secretion, and stimulates tissue repairs.—*Pharmaceutical Journal*.

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, August 12.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temporary Lieutenant:—

G. Sutton, F.R.C.V.S. Dated Aug. 1.

Aug. 13.

To be temporary Majors:—

Capt. A. S. Head, Res. of Officers; Temp. Lieut. F. T. G. Hobday. Dated Aug. 14.

Aug. 16.

J. D. Broome to be temp. Capt., and not as stated in *Gazette* of Aug. 3.

Aug. 17.

To be temporary Lieutenants:—

R. Colthurst. Dated July 17.

F. J. Ahams. Dated July 20.

M. J. Brett, G. K. Shaw, W. H. Heaney. Dated Aug. 1.

J. McLean. Dated Aug. 2.

J. Edgar. Dated Aug. 4.

Aug. 18.

Capt. W. C. Quinnell, late Australian Forces, to be temp. Captain. Dated July 28.

To be temporary Lieutenants:—

S. Villar, F.R.C.V.S., T. Russell. Dated Aug. 1.

T. A. McC. Finch. Dated Aug. 2.

Surname of Temp. Lieut. W. Lenton is as now described, and not as stated in *Gazette* of July 9.

Aug. 14.

TERRITORIAL FORCE RESERVE.

Capt. J. S. Channon, from Army Vet. Corps (T.F.), to be Captain. Dated Aug. 15.

MEDITERRANEAN EXP. FORCE. ARMY VET. CORPS.

The following casualties in the Mediterranean Expeditionary Force are reported:—

WOUNDED—Pte. H. T. Beamon, 4166; Pte W. M. Cooper, 3590.

Wali Muhammad, Veterinary Jamadar, Supply and Transport Corps.

OBITUARY.

ALBERT MARSHALL, M.R.C.V.S., Victoria Road, Dartmouth, S. Devon.

Graduated, Edin.: July, 1886.

Mr. Marshall died on August 6th. Aged 50.

GEORGE ALEXANDER THOMPSON, M.R.C.V.S., City Chambers, Edinburgh.

Graduated, Edin.: Dec., 1891.

Mr. Thompson's death occurred July 1st.

A.V.C.—A CONCESSION.

Sir,

It is from the ranks of the general practitioners that the A.V.C. must look for recruits. (Presumably, the Department will only allow a certain number of its staff to join). No doubt there will be a rush of general practitioners after the latest "concession." Surely there was never a more damnable unfair proposal, but we are a long-suffering crowd.

What does the Department officer come back to?—His fat job.

What does the general practitioner come back to?—a practice suffering from pernicious anaemia.

I should dearly like to tell some stories about what you, Mr. Editor, so kindly call "specialists in the control of contagious diseases." I venture the opinion on my own, that the general practitioner of over five years standing is a ten times better man in an army sick lines than the aforesaid specialist. As "Strafe" points out, *their* labours are more amongst the porcine community than the equine.

However, as long as the great god "codology" is worshipped, we general practitioners can whistle. "Strafe" and your humble servant have done their duty in pretesting, but by the look of your correspondence column, we are only "crying in the wilderness."—Yours.

ANTI-HUMBUG.

New Serum for Wounds.

The *Matin* announces the discovery of a new "Poly-valent" serum, due to the labours of MM. Leclainche and Vallée, professors at the Veterinary College at Alfort.

According to a military surgeon, the results obtained are almost miraculous; soldiers who were horribly mutilated and whose wounds were so infected that their lives were despaired of, have made rapid progress, and are now on their feet, anxious to know when they will be allowed to rejoin their comrades in the firing line.

At present not more than 2,000 phials a day of the new serum can be made owing to the shortage of the staff, and it has only been possible to use the "Poly-valent" serum in the hospitals at the base.

When it can be applied as a preventive in the firing line, like the anti-tetanic serum, thousands of additional human lives will be saved.—*Evening News*, Aug. 10th.

[It is gratifying to the profession to learn that these two distinguished members of our profession (both of whom are Hon. Associates of the R.C.V.S.) have been able to be of great service in the treatment of terribly infected wounds of soldiers as well as horses. This fact alone goes to show the progressive importance of veterinary science, and therefore that it should be more thoroughly cultivated in the United Kingdom, or rather in the British Empire, than hitherto.]

But the veterinary surgeon should be given a chance and not have his preserves poached on by those who do not always make the best use of their own.—H. G.]

*. The foregoing was unavoidably held over last week.

Prosecution by the R.C.V.S.

Illtyd Stewart, 28, haulier, Newport, was fined £5 and £5 5s. costs by the Caerphilly magistrates on Aug. 10 for using and taking the description of a veterinary surgeon while not registered.

Mr. Lyndon Cooper, Newport, prosecuted on behalf of the Council of the Royal College of Veterinary Surgeons, and said it was an offence against the Veterinary Surgeons Act of 1881. Defendant had been carrying on the business of veterinary surgeon for a considerable time at Caerphilly and Senghenydd, representing himself as qualified. On June 1 he had come to this very Court and said on oath he was a veterinary surgeon, and that he was duly registered.

Mr. Edgar George Haggett, Newport, produced the register of the Royal College of Veterinary Surgeons for 1915, which showed that defendant was not a member of the College, and was, therefore, absolutely unqualified.

Mr. R. Y. Evans (magistrates' clerk) produced the depositions made by defendant in a case at Caerphilly Police Court on June 1 last. Defendant in evidence on that occasion said: "I am a veterinary surgeon, and live at Caerphilly," and also stated in cross-examination, "I am the only veterinary surgeon in Caerphilly, and I am registered."

Defendant did not appear, but was represented by Mr. C. Reginald Harrison, who said defendant did not realise that he was doing anything wrong, as he had a practice. He expressed regret on defendant's behalf.—*The South Wales Argus*.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended August 14	7	9			1	1	8	19		59	267
Corresponding week in											
1914 ...	11	11				2	5	6	1	61	224
1913 ...	6	7				2	34	54	2	61	551
1912 ...	5	5	4	25	1	3	19	33		40	427
Total for 33 weeks, 1915 ...	407	467			36	64	1555	1219	159	2871	12853
Corresponding period in											
1914 ...	505	546	11	74	70	216	1516	2628	151	2711	28412
1913 ...	367	402			110	286	1880	3798	127	1634	21903
1912 ...	550	626	67	435	118	226	2317	5050	170	2154	27958

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked: Stafford 1.

Board of Agriculture and Fisheries, August 17, 1915

‡ Figures for twenty weeks only.

IRELAND. Week ended August 14	...	...	...	...	...	...	Outbreaks	3	5	5	23
Corresponding Week in											
1914 ...	...	...	...	...	...	...	2	1	6	24	
1913 ...	...	...	...	...	...	...	2	5	3	5	
1912 ...	...	...	5	10	...	...	1	...	3	5	
Total for 33 weeks, 1915	1	1	...	...	1	3	49	275	170	949	
Corresponding period in											
1914 ...	1	1	76	957	...	...	58	380	150	744	
1913 ...	...	...	...	...	...	...	96	358	106	613	
1912 ...	3	3	21	213	...	...	51	262	170	1441	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, August 16, 1915.

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1416.

AUGUST 28, 1915.

VOL. XXVIII.

UNQUALIFIED PRACTICE.

Most practitioners will agree that unqualified practice—by which we mean practice carried on, not by the old “registered existing practitioner,” but by men without legal licence of any description—has been on the increase for years past. One of the countless by-effects of the war will be to render this unqualified opposition more serious to us. The number of unlicensed practitioners may not have increased greatly by the time the war is over; but a good many of those now practising are certain to have improved their positions.

The reason is obvious. We all know the effect the war has had upon veterinary practices, especially in the country. Some are left wholly unattended; others are being worked as well as possible by practitioners who, though neighbours, are not always very near at hand. The result is that in many districts it is difficult to obtain qualified veterinary services at all, and impossible to obtain them for anything like the price at which they were once available. Under the circumstances it is not surprising if owners, instead of paying for long journeys by qualified men, elect to go to nearer and cheaper unqualified ones. But the net result will be that, before the war ends, the unlicensed practitioner will have gained a footing in many places in which he never had one before, but from which he may be difficult to dislodge.

It is better to recognise this at once—to admit that the war has given unqualified men an opportunity which many of them will be able to use to our disadvantage. Their opposition was serious before the war; it will be still more so afterwards. We can consider later how to deal with it; but we must not forget that we ourselves are responsible for much of it. Unqualified practice would never have become so serious an evil as it is, had it not been for our old practice of employing unqualified assistants.

DIGIPUREN.

Many will read the long clinical report on this new Italian preparation which we print to-day with a certain amount of scepticism. Digitalis itself has long been recognised as one of the most potent and valuable drugs in the pharmacopœia. But attempts to obtain extracts of its active principles have not hitherto been quite satisfactory; and we have not one such extract which is universally accepted as free from drawbacks. This new one promises well; but it is too early to say more.

A CASE OF LEAD POISONING IN THE PIG.

By HENRY TAYLOR, M.R.C.V.S., Haywards Heath.

Cases of lead poisoning in the pig are probably not very common. The cause of the case in question arose in the following manner. A carpenter employed on an estate in repairing and painting a gate, left a tin containing about 2 lbs. of white lead paint, on the ground in a cart shed. A sow about three months pregnant, running at liberty round the farm, came across the paint and proceeded to eat it. She was a large black sow, and in addition to partaking of it, evidently thought that in these days of culture she might emulate some bipeds of the same sex, and apply a quantity of it for the beautifying of her personal appearance. This she did in fine style. Next morning the owner noticed nothing amiss with her beyond the bedaubed appearance and did not suspect that any harm would result. In two or three days time the animal went off her feed and the fæces passed were a greyish-white colour, so he gave her a dose of Epsom salts. During the next few days she became lethargic, lay down a great deal, and would eat hardly anything except a little green grass in the field. This state of affairs continued until I was called in on the 11th day after the ingestion of the paint. In the meantime it had been ascertained that she had made away with about 2 lb. of it. The medicines prescribed were sulphates and iodide of potassium, with a dose of linseed oil every other day. In four days it was reported that there was a distinct improvement, and recovery seemed very probable. Previously there had been some interference with muscular action when walking, but now that was better and the appetite had partially returned. Next day, the sixteenth since the ingestion of the paint, she suddenly began to run about in an excited manner and was with difficulty got into the sty. Being sent for again, the following were the symptoms exhibited on my visit; the sow was racing about the pen, quite mad and quite blind, banging her snout violently against first one wall then another, causing the blood to spurt out, and disfiguring everything. She seemed in a good deal of pain and quite unable to control herself. A hypodermic injection of morphia had little or no sedative effect, and she died in about an hour.

There are one or two points worth noting about the case; first, the length of time which elapsed between the ingestion of the paint and death; second, no abortion took place; third, the apparent recovery and the sudden onset of brain symptoms; fourth, the fæces had become at the latter end almost normal in colour; and fifth, the violent brain symptoms compared to the slight muscular ones. No blue line round the gums was detected.

ABSTRACTS FROM FOREIGN JOURNALS.

THE EFFECTS OF DIGIPUREN, A NEW DIGITALIS PREPARATION, IN VETERINARY PRACTICE.

Digipuren is a fluid preparation of the active glucosides of digitalis, which has recently been introduced into therapeutics by the firm of Belloni, Muraro, & C., of Milan. It has already gained a reputation in human medicine, but does not appear to have yet been used in veterinary work. G. Braglia, for some time past, has been trying it in veterinary practice in cases in which digitalis was indicated, and has now published his results. The following is a summary of the cases he records:—

Case I. was a pointer bitch, two years old, affected with ascites. The animal was in a pitiable condition, was very thin, and moved with difficulty. The abdomen was enormously distended, the respiration was dyspneic, and the limbs were oedematous. The abdomen was punctured, and six litres of liquid drawn away. Some liquid was left in the abdomen, in order that the intra-abdominal pressure should not be diminished too greatly.

The pulse was very weak, and counted from 150 to 160 per minute. To regulate it, and also to encourage the absorption of the remaining liquid, daily injections of digipuren were given. Two, and sometimes three, 1 c.c. phials were given daily. After the remedy had been administered an hour the pulse dropped, showing a diminution of from 8 to 10 beats per minute. The pulse also became stronger; and a more abundant urination was noticed. The injections were continued for quite ten days, and no sign of accumulation was seen. No swelling appeared at the sites of injection.

This treatment gradually restored the animal to good condition, and the owner has since reported her to be perfectly cured. [The author offers no opinion as to what may have been the cause of the ascites.—*Transl.*]

Case II. was a male fox terrier, eight months old, affected with the thoracic form of distemper. The animal was very dull and prostrated. Cough was frequent, a nasal discharge streaked with blood was present, the eyes were bleared and sunken, and the mucous membranes were cyanotic. The temperature was 106.1° F., dyspnea was present, and the respirations counted 52 per minute. The pulse was rapid and thread-like, and the heart very weak. Percussion revealed dulness on both sides of the thorax; and auscultation yielded crepitant wheezing.

Treatment consisted of medicated inhalations, painting both sides of the chest with tincture of iodine, and the intravenous injection of digipuren. Two 1 c.c. phials of digipuren were injected into the saphena vein daily, one phial in the morning and one in the evening. After the first injection the condition of the heart improved considerably; its tones were stronger, the pulse rate fell, and the respirations were more regular. It was very clearly observed in this case that, after half an hour from each injection, the temperature fell from 0.6° C. to 0.8° C. (= from just over 1° F. to almost 1.5° F.),

and then rose gradually some hours later. The author regards this as a proof that digipuren is as rapid in its elimination as in its effects, and that, therefore, there is no danger of cumulative action. The general condition of the animal improved very quickly. The dulness and abnormal sounds of the lung disappeared; the appetite returned; and, after six days, the dog left the infirmary convalescent.

Case III. was a terrier bitch, a year old, suffering from the pleuro-pneumonia of distemper. The animal had been affected four days; and a good part of the lung was hepatized. The respiration was superficial, frequent, and executed with labial movements. There was a painful cough. The pulse was small, transient, unequal, and intermittent; and it counted from 135 to 140 per minute. The temperature oscillated from 105.8° F. to 106.7° F. The aspect of the case was very serious. Intravenous injections of digipuren were at once given—three 1 c.c. phials daily at first, and afterwards two phials. In this case, also, good results were obtained with digipuren, which proved itself a true cardiac tonic, and at the same time an efficient antipyretic. No thrombosis or other local disturbance followed the intravenous injections.

Case IV. was a male hunting dog, six years old, affected with cardiac disturbances. The animal was incapable of slightly prolonged exertion, and was several times attacked by syncope, always while attempting to go up or down stairs. The temperature was normal. The respiration was short and dyspneic. Auscultation showed the vesicular murmur to be slight. The area of cardiac dulness was increased; and the beats of the heart were weak and indistinct. The pulse was small, somewhat compressible, and arrhythmic. The limbs were oedematous; and the oedema extended under the abdomen. The urine was scanty and destitute of albumen.

Three injections, each of 1 c.c. of digipuren, were given daily for five days in succession. At the sixth day the cardiac condition had improved considerably. The pulse was fuller and more rhythmic; and the urine was more abundant. The oedemas had disappeared, and with them all the other symptoms of circulatory disturbance.

Case V. was an Irish horse, six years old, affected with bilateral pleurisy complicated with pericarditis. The horse had been affected for several days, and had been treated without success. General examination revealed muscular tremors, an uncertain gait, slight sub-icteric injection of the visible mucous membranes, and extensive hot, painful swellings of the hind limbs. The temperature was 104.3° F., the pulse was thread-like, fast, and irregular; and the respirations were superficial and frequent, counting from 36 to 40 per minute. The horse attempted to withdraw himself from percussion of the thorax, which operation revealed a normal resonance in the upper part, but dulness lower down, in nearly all the inferior third.

Auscultation of the thorax, especially of its upper portion, gave an impression of friction sounds; and it proved absolutely impossible to perceive the beats of the heart.

An intra-muscular injection of 10 c.c. of digipuren was made on the right side of the neck. A few hours afterwards the temperature was somewhat lower; and the first sound of the heart was perceptible. The injections were continued for some days; and the result may be summarised by saying that the treatment was completely successful. All the symptoms of pleurisy and pericarditis disappeared; and the animal finally left the hospital perfectly cured.

Case VI. was a horse of native breed, six years old. The history was that the animal was affected with chronic hydrocephalus, and had been treated for this for some time with various remedies, including injections of pilocarpine, but with little success. The horse was in a good state of nutrition; but had a depressed, stupid, and somnolent aspect. Amblyopia was present; sensitiveness was much diminished; the gait was uncertain, and, in walking, the horse raised his hind feet considerably as if to surmount some obstacle. The pupil was considerably dilated. The temperature and respirations were regular. The pulse was weak and slow; the heart was also weak, and only its first sound could be heard. The diagnosis of chronic hydrocephalus was confirmed.

A ball of 25 grammes of aloes was given; and, in order to combat the weakness of the circulation and the atony of the heart, digipuren was used. Three 5 c.c. phials were injected in the day; and these injections were repeated for six successive days. This produced a distinct physiological effect; the pulse became stronger, the beats of the heart were more energetic, and both its sounds could be heard. The general condition of the horse was then much improved; but some symptoms of hydrocephalus still remained. A smart blister to the sides of the neck completed the treatment; and the horse was discharged cured about a month after being taken in hand.

Case VII. was a six-year-old horse of native breed, affected with double pneumonia. He had been affected for two days; and when first seen his condition was alarming. The temperature was 106.1° F; the pulse, which was small and thread-like, was 80 per minute; the respirations were 38 per minute, and were irregular. The heart was very weak. On both sides of the chest there was a dull resonance over almost all its inferior half, with no vesicular murmur, but with crepitant wheezing and friction sounds.

A sinapism was applied to the sides; and 15 c.c. of digipuren was immediately given subcutaneously. The next morning the pulse was 74 per minute, the respirations were 34, and the temperature 104.3° F. Another 15 c.c. of digipuren was given; and at 2 p.m. the pulse was 63 per minute, the respirations 26, and the temperature 103.3° F. The next day, in the morning, the pulse was 72, the respirations 28, and the temperature 102.9° F. Another 15 c.c. of digipuren was given; and in the evening the pulse had fallen to 64, the respirations to 24, and the temperature to 101.6° F. On the right side the dullness had almost disappeared, wheezing sounds were present, and the heart was still a little weak.

The injections of digipuren were repeated; and four days later, the horse had completely recovered from the pneumonia.

The author regards these cases as clearly proving that digipuren has an action analogous to that of digitalis leaves. But it possesses the following advantages over digitalis leaves and their infusion. It is perfectly dosable, being constant in its constitution. Its action is more prompt and more certain than that of digitalis. It may be administered by the hypodermic, intra-muscular and intravenous channels without any inconveniences; and on that account it is to be preferred to the various digitalins and even to digalin, which, according to Doru, causes irritation at the point of injection. The author, therefore, regards digipuren as one of the best preparations of the active principles of digitalis; and commends its use in animal diseases when digitalis is indicated. The doses by hypodermic injection are from 15 c.c. to 20 c.c. in the horse, and from 3 c.c. to 5 c.c. in the dog.—(*La Clinica Veterinaria*).

W. R. C.

NOTE.—In the short extract on the use of calomel in swine fever, p. 95 of last week's issue, the *dosage given is in grammes*, not in grains.

THE VETERINARY MEDICAL ASSOCIATION OF IRELAND.

(NATIONAL V.M.A.—IRISH BRANCH).

(Continued from p. 93.)

Mr. MAGEE: I must say I would like to have heard Prof. Craig read the paper, and I am sure so would other members of the Association, I would have read it, but I have been exceptionally busy. Prof. Craig deserves great credit for bringing this paper before us, although it was intended for a far more important meeting than ours. I congratulate Prof. Craig, and although I do not agree with him on certain matters, I cannot help congratulating Mr. Norris on his criticism of the paper. I do not say that everything he stated was right, but I have seldom heard better or more common-sense criticism. Mr. Norris referred to my paper on "Thrombosis of the Anterior Mesenteric Artery." He agrees with me, and I say that most of my views on the subject were right. At the same time a very eminent member of the Association, Mr. Howard, questioned many of my statements.

The CHAIRMAN: I am afraid you are going into another matter.

Mr. MAGEE: He said I took a great deal for granted.

Mr. HOWARD: Assumed, I said.

Mr. MAGEE: Probably I was assuming in some cases; but I reported my experience with regard to nematode worms (*Strongylus vulgaris*) and thrombosis. Mr. Patrick asked to-night if anyone had any experience of the treatment in the use for atoxyl for strongylosis. Personally I never saw or read of its being used for the eradication of thrombosis, and I think it is a foolish suggestion. Anyone who has seen a case of thrombosis will say that it is foolishness to think that such a drug would be of any use. Here you have a thrombus several inches long composed of fibrin and in the centre you have these little nematodes lying away where no drug, in my opinion, could possibly get near them. You

would practically want the whole thrombus absorbed before the drug could have any effect on the nematodes. I think atoxyl in that case would be absolutely useless. With regard to the trouble caused by nematodes, my actual experience is that a good many owners are very fond of "worming" their foals at certain periods. They have a great belief in certain worm powders which come from England. I have sometimes asked them if they have seen the worms come away as a result of the powders, and they always had to confess that they did not see any. They administer them every year, whether the foals want treatment or not. I cannot help thinking that it is wonderful how the poorer owners manage to get on all right without even knowing of the existence of these powders.

Prof. CRAIG: Do the poorer owners breed so many animals?

Mr. MAGEE: No, they breed one or two foals and they get on alright; they are in much poorer circumstances. I have not seen more disease amongst the poorer owners' foals than amongst those of the wealthy breeders; in fact, my experience is the contrary. I really believe the foals do not require the worm powders at the stated periods. I know, too, that some people are always worming their puppies at certain periods, and if anything goes wrong they attribute it to worms. I have a good deal of experience in one matter, and I must say I think Mr. Norris was wrong in his reference to the treatment of hoose in calves. It is a pity we attach so much importance to the names of many foreigners, and I agree with him in reference to that. The reason they seem to have such influence is that they publish the results of their experiences more than we do.

Mr. NORRIS: The quotation has no point as a rule, but bringing in the name gives the paper a literary touch.

Mr. MAGEE: When you have hoose in a number of calves Scheibel's method is hardly worth the trouble. As a result of reading Scheibel I have adopted a method of treatment which I have found very successful. I inject into the trachea Scheibel's mixture, viz., creosote, alcohol, distilled water, and chloroform. I use a stout syringe and a hypodermic needle one-sixteenth of an inch thick, with holes bored in different parts for about an inch from the point, of which the orifice is blocked. I shove it until I reach the far side of the windpipe: and I have injected half an ounce of the mixture—and as much as two ounces, in the case of a cow, with most wonderful results.

Prof. CRAIG: For what?

Mr. WILKINSON: Hoose.

Mr. MAGEE: I was asked to see a cow which the owner said was blowing very hard. I found her respiration 120 to 150 per minute. Her temperature was about 102. There was not very much to be got from her history. She was found at grass in that condition. Strange to say she was feeding and looking healthy otherwise. I suspected lung trouble, and examined the lungs, but could find nothing wrong. I was puzzled as to what the trouble was, but I had to make some diagnosis. I attended the case next day, and she was in the same condition, I thought that, in justice to my client, I would have to do something. I said I thought it must be a complication—that either a foreign body had entered the stomach or that it was possibly a case of hoose, which was very exceptional in a cow six or seven years old. He asked me what I would suggest, and I said I would go home and get my hoose apparatus. I did, and cut down on the cow's windpipe, and injected two ounces of Scheibel's mixture. She took a most violent fit of coughing, and I saw her swallow something which I was confident was a bolus of worms. In about ten minutes she was breathing almost normally. That is the only case I have had where there could not be much

doubt as to the nature of the trouble, and as it yielded to treatment in such a few minutes I thought I should mention it.

Mr. HOWARD: Mr. Chairman,—With your permission I must first refer to Mr. Magee's protest. He has taken this opportunity to refer to the fact that on a previous occasion, when discussing his paper, I pointed out that he was assuming too much. Well, as he has again referred to the matter, I regret to have to say that as he assumed too much then, he is assuming a terrible whole lot now. The very idea of a man going out to treat a cow, and arriving at the conclusion she is suffering from hoose, treating her, and seeing her cough up something and swallow it, assumes that it is a large bolus of worms commonly associated with hoose. Mr. Magee has great faith in assuming things, but I assure him that it would take an investigation into what was the composition of that bolus before even such an authority as Mr. Magee would make me believe that that cow was affected with hoose at all. However, she got well, and that satisfied.

The CHAIRMAN: I think we ought to discuss the paper, and not Mr. Magee.

Mr. MAGEE: Will Mr. Howard suggest what it was if it was not hoose?

Mr. HOWARD: I think Prof. Craig deserves the greatest possible credit for bringing forward a subject which, like Mr. Magee's, we may describe as of national importance. The diseases due to worms cause great havoc, and if we could do anything to remedy that state of affairs we will be doing good work. Prof. Craig deserves the thanks of the profession and of the community, even though he quotes some of these great men I don't know anything about. We men in the country cannot agree with all those authorities say, when we see some of the cases we meet with in the ordinary course of our profession, and I think that some of the suggestion they make are absolute nonsense. In discussing the paper Mr. Patrick practically read another paper. He spoke, I think, of intravenous injection of atoxyl for locating worms in blood-vessels. The idea that intravenous injection would have any effect on the worms away down—I don't know how many miles in the circulation—measuring the length we believe the drug would have to travel, I endorse as absolutely nonsensical. I think, from what we have been taught, that anything you inject into the blood system would undergo a complete change before it came into contact with worms in the mesenteric artery—or any other part of the system. Prof. Craig suggested in the treatment of worms in foals that it would be convenient to give drugs in water, and leave it for the foals in the morning or in the evening. I think if Prof. Craig had much experience he would change his idea of the practicability of giving drugs in water, for foals, when left on the dams, will never drink water; and when they come to a year old they fight very shy of it. Besides, the quantity of the drug cannot be so well regulated in the water. You would find it easier to give the proper proportion in the food, for they will go without water when they won't go without their food. Mr. Magee and Prof. Craig referred to the question of the difference between the foals reared on the big stud farm and those of what was called the poor man producer. That question was gone into fully at the last meeting, and it was explained that the stud farm as we know it is simply poisoned, whereas the poor man produces two or three foals on a couple of hundred acres which do not become poisoned. It is not so much the immediate effect on the worms that we have to consider in the administration of drugs to foals, horses, and other animals—if they have any effect at all. Personally, I think they have not very much, if even any effect, on the worms. Drugs act as tonics to the system generally, and with the use of drugs there is better food and care of the animal. Somehow, poverty always seems to be one of the conditions that goes a long way

towards the production of worms. Even where there is a certain amount of poverty, when the animal is fed and given no drugs, you find that the worms begin to disappear in the majority of cases. Mr. Patrick very properly said, the breaking up of land and more tillage, would have a material effect. It would bring about more feeding material, and the animals would be better fed. About arsenic: no doubt it acts as a tonic, and when good feeding is given the animals are kept in better health.

Some of the other things recommended included tobacco—used nearly always by the older people. My idea about tobacco is that it has no immediate effect on the worms. It simply has the same effect as scouring out the beast, the same as aloes or other drugs.

I am not surprised to hear the fumigation treatment condemned, because in the form recommended I think it is absolutely fatal as a treatment for hoose in calves. I assure Prof. Craig that if he goes on to treat calves by keeping them subjected to burning sulphur in a closed building for half an hour, he will not be called in to treat the calves again. The will not die of hoose, but that treatment will kill every one of them. Even a large herd of calves could be easier dealt with by fumigation than by intratracheal injection by Scheibel's treatment. In the case of two or three it might be very nice to stick a needle into each one of them, but if you had fifty or sixty it would be very tiring work. The owner of calves would hardly be able to allow a proper fee for doing this work, and it would be nonsense to expect it. I probably have as much experience as anyone here in treating this disease, and I am happy to say that the best possible results have been entirely from fumigation. I recommend it everywhere. But the calves are only exposed for five minutes, and there is a terrible difference between five minutes and half an hour. After it, unless the lungs are already packed with disease, the trachea and upper air vessels in 99 per cent. of cases will get well. But the fumigation should not last longer than five minutes. It is useful also to administer turpentine.

Prof. CRAIG: You do not rely entirely on the fumes?

Mr. HOWARD: Sometimes, with the best possible result.

Mr. NORRIS: Have you ever left them without fumigation and had them cured?

Mr. HOWARD: I was just going to say that I was glad to see that Prof. Craig states that in one case he fed a calf and gave it no medicine, but while he gave others intratracheal injections, the untreated calf did as well as the others. I firmly believe in feeding, but I also firmly believe in fumigation: but you must remember we cannot always have the little theories we have in our minds adopted, and farmers cannot always afford to feed. If you are going to be of any use you must do something, and I think fumigation will be found most effective. A considerable number of worms are coughed up, and worms are killed as well. It is very much better in the case of fifty calves, than injecting each one in the trachea. I hope I will not be regarded as uncomplimentary in the manner in which I have criticised Prof. Craig's paper. I have simply endeavoured to convey my own impressions from a practical standpoint, and that is what we want in the country. (Hear, hear).

Prof. O'CONNOR: I read Prof. Craig's paper with great pleasure, and have nothing but admiration for it. I know very well the careful attention that Prof. Craig devotes to these worms from the scientific aspect. It is very important that the subject should be approached from this point of view, so that something may be learned of the life histories of these parasites, for very little is known of them at present. If we could learn more in this respect we might be able to take effective measures to prevent their reproduction.

As to the need of drugs, I have an idea that when an animal is showing disease, the result of worms, treatment has little or no effect. What I would like to insist upon is prevention. We know that vermifuges sometimes do expel worms, for example, in the dog, but in herbivora grossly affected with nematodes they are useless.

I should think that fumigation ought to be the best treatment for hoose, since the drug in this case reaches the seat of the worms. I have had good results from intratracheal injections.

I must express my thanks to Prof. Craig for the great trouble he went to in preparing such an excellent paper. It was intended, of course, for the International Veterinary Congress which was not held, but their loss is our gain. (Applause).

REPLY.

Prof. CRAIG: Mr. President and Gentlemen,—I thank you very much for the way in which you discussed the paper, and I am glad that I have been favoured with some information as to your experience and opinions with regard to the treatment of disease due to nematode worms. In cases like those it is always extremely difficult—as with all medicines—to make out whether the results have been brought about by the action of the agents given, and naturally there is bound to be a considerable difference of opinion.

As to the title of the paper, I was not given the prerogative of selecting it. I was given the title, and was told to write upon it, so that is the reason for the title of the paper. It might not be the best title for it, still I wrote upon it, and there was no means at the time of changing it, and it has been allowed to remain.

Regarding the President's remarks, I do not know of any means by which prescriptions can be kept from the hands of the chemist. The only possible thing to do is to impress upon the client the great necessity for arranging doses of drugs according to the patient.

Mr. Patrick, in opening the discussion, amplified a great deal what was stated in the paper, which was bound to be condensed. As there were so many worms to be dealt with, there were very few things in it which could not have been amplified. I cannot agree with him that there is any specific agent against any particular nematodes. In the case of herbivora, the agents which are used are very uncertain in their effects. I have seen a few cases in which ascarides caused rupture and perforation of the bowel wall in the horse. In considering the question of worms in herbivora, whatever may be said against the periodical use of vermifuges, it has considerable advantages, and I think one would be remiss if one did not suggest to the owners in cases where the disease did appear that these medicines should be given occasionally—not that when the disease appears that they are always likely to be of service. They are likely to be of service when it is not causing very much inconvenience. There are certain conditions in which astringents may be used. One can often only deal with the effect of the worms; the worms have either been got rid of but produced serious damage to the bowel wall, or have entered the bowel wall and cannot be removed, e.g., in sclerostomiasis in horses. In such cases where diarrhoea is set up, astringents may be usefully employed.

I know that tobacco has been recommended in the treatment of gastritis due to nematode worms in ruminants. It is particularly common in America in the form of tobacco leaves—with good results, but I notice where it has been used in this county—speaking of Great Britain and Ireland—the results have been very uncertain. I think medicines are only likely to be of service in this form of disease in cattle when it is treated early. A good many cases met with in actual practice are in advanced stages. The worms have produced

strongly affect. They have considerably injured the mucous membranes and have inoculated bacteria.

Reference has been made to the dangers attending the use of carbon bisulphide. No doubt the result of drugs is good or bad according to whether they are given in right or excessive doses. I agree with Mr. Patrick that vermicides are more certain in smaller animals, as the bowel is more easily cleared out in the first instance to allow the vermicide to act, but there are certain conditions when it is exceedingly difficult to deal with the disease. In an outbreak of ankylostomiasis among foxhounds, which I saw some time ago, anthelmintics proved of little service in advanced cases.

Mr. Norris referred to the production of tumours in the stomach of rats in which nematode worms were present. If the tumours were due to the worms the latter produced their effect by the action of toxins.

With reference to the question of large numbers of worms being present in certain cases which did not appear to produce disease, I think I ought to refer to the explanation I gave in the paper. "It may be that in debility the media furnished by the host are more favourable to the development of this parasite or that in a stronger body antitoxins are formed which inhibit the development of large numbers of worms or prevent their ill effects." That is one explanation. There is another. I indicated that these worms may sometimes inoculate pathogenic bacteria into the tissues of the host. In some tumours organisms are present which could only have been introduced by inoculation by these worms. In the examination of intact tumours of spiroptera megastoma of the horse's stomach numerous bacteria were found. In strongyles of the horse sometimes the animal, which is apparently healthy, becomes affected with an acute enteritis and dies. There are plenty of worms present in the bowel, but not sufficient to account for the symptoms. These symptoms can only be explained by the introduction of pathogenic bacteria into the tissues through the agency of the worms. That is the explanation one could give for very acute symptoms.

The dressing of the lard with salt has been objected to. I have seen lards treated in this way with very good results.

Mr. NORRIS: As a rule double the quantity you state is used—of lime or salt.

Prof. CRAIG: A solution of salt is very deadly to these worms, especially in the larval or embryo stage. It destroys them rapidly. The only objection to salt is that when the rain comes it washes the salt away very rapidly.

As to M'Fadyean's experiments, I do not know of any experiments of a like or direct nature dealing with the action of various agents on nematode worms. The way in which drugs act inside the body cannot be clearly shown, and explanations of their action are only matters of opinion. In herbivora these agents are diluted to such an extent in the stomach that one cannot know if they come in contact with the worms in sufficient strength as anthelmintic or not. I agree that it is useful to examine the faeces for the purpose of diagnosis of worms in the alimentary canal, but one must remember that in herbivora one will find eggs and worms commonly present where there has never been any disease caused by worms. In one case in the horse I have found eggs of strongyles in the faeces and on post-mortem could find no worms in the alimentary canal.

Mr. NORRIS: Where did the worms come from?

Prof. CRAIG: Through the food—contamination of the food. I agree that in a large number of cases an examination of the faeces would be helpful in ascertaining in connection with certain symptoms whether worms would be likely to be present. It is quite easy to distinguish the eggs of the *strongylus micrurus* and

strongylus gracilis. The eggs of the former contain embryos, while the latter are in the morula stage.

Mr. Norris told us that in his experience fits and similar symptoms in pigs were not due, in quite a proportion of cases, to the presence of ascarides, and that in these cases ascarides were often absent. I agree that other causes may be active in the production of these symptoms. At the same time toxic symptoms such as convulsions are not dependent on the number of parasites. What has been the pronouncement in a human subject where cause and effect could easily be associated. Galli Vallerie states that he infected himself with the human ascaris and he experienced more discomfort when he had only one worm present than when he was infected with quite a number of worms. That goes to show that the symptoms are not always an indication of, and in proportion to, the number of worms. I am not quite clear in my mind as to the connexion between the fits and tricocephalus in the case Mr. Norris mentioned. They are not usually associated in the way of cause and effect.

Whether on account of the war or other circumstances objection has been made to the names of people being quoted in connection with papers. For my part I do not agree with that idea. I think that all the information and all the experience of interest or importance that can be had on a subject should be quoted and discussed. It is hardly fair with reference to new forms of treatment to say they are no good before trying them at all. That applies to a particular treatment I referred to in my paper—Scheibel's treatment for strongyles in the bronchial tubes. The idea is a good one: the method is perhaps too elaborate, but can easily be modified according to the circumstances of the case.

I totally disagree with Mr. Magee as to giving periodic doses of worm medicine. I think that if worm medicine is given to horses in the case of sclerostomes, it would be more likely to be of service to animals exposed to infection before the symptoms appear; but when animals are only a year old that it should be given wholesale is a different matter altogether. I think the owner will be well advised to obtain all his medicines from the veterinarian who may be in the habit of attending his animals.

Mr. Howard had said that a great deal of nonsense had been talked about drugs and disease, and that atoxyl was no use as a vermicide.

Mr. HOWARD: I said nothing of the kind.

Prof. CRAIG: The suggestion was that it was of no service in dealing with the strongylidæ of the horse.

Mr. HOWARD: I referred to atoxyl given intravenously.

Prof. CRAIG: The treatment has been recommended and the cases in which it has been recorded as being used great improvement resulted. Surely none of them were so well satisfied with the results of treatment in the condition that they would have nothing to do with anything new brought forward.

As to sulphur dioxide in the treatment of bronchial strongyles, for my own part I would not recommend it. I think that the good results obtained by Mr. Howard was attributable more to a generous diet than the inhalation of sulphur dioxide.

I thank you for the hearing you have given me.

Prof. Craig showed some interesting specimens illustrating his paper.

Mr. NORRIS proposed a vote of thanks to Professor Craig for his interesting lecture which he said, showed a great amount of research for providing such a paper for discussion. He deserved their very best thanks. (Hear, hear).

Mr. WILKINSON seconded the resolution, which was passed unanimously.

Prof. CRAIG having acknowledged the vote of thanks the meeting concluded.

Government Scheme for Stockbreeding.

A report has been published by the Board of Agriculture on the administration of the grant for the encouragement and improvement of the live stock breeding industry for the year, April 1, 1914--March 31, 1915. It contains the first authentic account of the progress of the scheme, financed by the Development Commission for providing subsidized bulls, boars, and stallions in England and Wales for the use of small farmers at nominal fees.

Mr. E. J. Cheney, describing the work done since the scheme was put on a working basis in the spring of 1914, states that the record of progress is extremely creditable. The total amount which the Board were authorised to spend during the year was £37,000, and it was allocated in the following grants:—

For the provision of bulls	£13,700
For the provision of boars	1,200
To heavy horse societies	9,100
To milk-recording societies	4,600
To agricultural institutions for the employment of live stock officers	8,400

The scheme, Mr. Cheney states, may be considered to have been well received. Since its inception 497 bulls and 115 boars have been allocated for service, grants have been made in respect of 72 stallions, and 16 milk-recording societies have been formed and started operations. The service fee of the bulls varied from 5s. to 2s. 6d. It is explained that these pure-bred bulls, costing on an average over £36, in many cases took the place of mongrel animals costing anything from £10 to £20. The progress of the movement for encouraging the keeping of milk records is especially gratifying.

Cystic degeneration of the Ovaries in a Cow.

A case was recently investigated by the biologists of the Maine Agricultural Experiment Station. A pure-bred registered Ayrshire cow, belonging to the University of Maine, produced three calves, on dates as follows:—September 17, 1909; September 10, 1910; and February 24, 1912. When three years and 327 days old she was started in an official milk test of one year, which she completed with a record of 11,463 lb. of milk, carrying 417.71 lb. of butterfat. During her first lactation she was 316 days in milk, and gave 7840.6 lb. of milk, containing 293.61 lb. of fat. Her second lactation was the one already given. Her third began February 26, 1912, and ended March 24, 1913. She gave 7016.8 lb. of milk, containing 253.92 lb. of fat. One reason for the low record in this lactation is that she was sick for some time during the period.

After March 24, 1913, the cow never gave any milk. The udder rapidly shrank to a very small size, and the animal began to show the external characteristics of a bull. This change was very slight at first, but soon became much more marked. After a lapse of eight months the general external appearance and the behaviour of the cow were like those of a bull to a remarkable degree. The neck had become thickened in its posterior parts, and had developed a well-marked crest, as is characteristic of a bull. If the cow had been so screened that only her fore-quarters and neck were visible, any observer would have unquestionably pronounced her a male. In the hind-quarters the change, while less striking than in the anterior parts, was still clearly evident. The udder shrank away to a very small size. The hips and rump took on the smooth, rounded, filled-out appearance, which is characteristic of the bull but not of the cow.

The cow was slaughtered on February 18, 1914. Autopsy showed as the only gross abnormality a simple

cystic condition of the ovaries. Under the microscope these ovaries differed from the normal in but one essential respect—namely, that they had no corpora lutea. This body pours into the blood a substance, which is known to have the function (1) of preventing the ovary from discharging any more ova, and (2) of preventing the animal coming in heat during the course of pregnancy.

The results of this study suggest as worthy a trial the injection of corpus luteum substance as a therapeutic measure in cases of cyst degeneration. The use of this material for somewhat analogous conditions in human medicine has met with marked success in some cases.—*Maritime Farmer*.

SALE OF ARMY MARES FOR BREEDING.

Forty-two of these mares, portion of a recent consignment of 83, will be sold by order of the Board of Agriculture, as follows:—

Nine on 31st August, at Inverness, by Messrs. Macdonald, Fraser & Co.; 9 on 2nd September, at Cheltenham, by Messrs. Warner, Sheppard & Wade; 12 on 2nd September, at York, by Messrs. T. Walker & Sons; 12 on 3rd September, at Lichfield, by Messrs. Winterton & Sons. It is hoped to arrange for further sales in various parts of the country during the next few months.

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, August 19.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temporary Lieutenants:—

J. Simpson. Dated July 26.

F. Chalk. Dated July 29.

Temp. Lieut. J. B. Cowx relinquishes his commission on termination of his engagement. Dated Aug. 5.

Aug. 20.

Surname of temp. Lieut. S. H. Kesten is as now described, and not as in *Gazette* of Aug. 7.

Lieut. R. J. Vickers, from Canadian A.V.C., to be temp. Lieutenant. Dated Aug. 21.

Following Officers of E. Africa Vety. Corps are granted temporary rank in Army:—

As Lt.-Col.—R. J. Sturdy; as Majors—W. Kennedy,

R. E. Montgomery; as Captains—A. G. Doherty,

H. H. B. Edwards, O. Dixon, W. Kearney, G. N.

Hall, F. J. Sheedy, R. L. L. Hart. Dated Sept. 1.

As Captains—

A. W. Carter. Dated Sept. 30.

F. J. McCall. Dated Oct. 16.

T. C. Bradshaw, M. H. Reid, R. Edmondson. Dated Jan. 1.

Aug. 24.

Temp. Lieut. F. M. Barnes relinquishes his comm. Dated Aug. 11.

Aug. 25.

To be temp. Lieut.:—J. Paul. Dated Aug. 11.

Aug. 21.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Following Lieutenants resign commission:—

A. J. R. Bott, J. E. Taylor, H. P. Whipp. Dated Aug. 22

Aug. 23.

To be Lieut.:—C. F. Shawcross. Dated July 15.

Lieut. E. H. Fisher resigns his comm. Dated Aug. 24.

Aug. 25.

Major W. G. Dixon resigns his commission on account of ill-health. Dated Aug 26.

The following casualty in the Expeditionary Force is reported:—

DIED—Pte. H. Curtis, 7955.

The following casualty in the Australian Imperial Force, with the Mediterranean Expeditionary Force is reported:—

DIED—Pte. W. J. Gilbert, 214, 2nd Vety Section.

The following casualty in the Mediterranean Expeditionary Force is reported:—

WOUNDED—Pte. J. N. Hardy, 5596.

Personal.

CONNER.—At Southwick House, Regent Street, Spalding, on August 20th, to the wife of Jas. Conner, M.R.C.V.S.—a son.

JEFFRIES.—On the 21st Aug., at York House, London Road, Guildford, to the wife of H. Hayward Jeffries, M.R.C.V.S.—a son.

OBITUARY.

LAMBERT.—On the 16th Aug., at the General Hospital, Alexandria, Lieut. Charles Henry Lambert, A.V.C., eldest son of J. H. Lambert, Redmount, Ballinasloe, aged 33.

PROFESSOR EHRLICH.

A Reuter message from Amsterdam reports that according to a telegram from Frankfort to the *Nieuwe Rotterdamsche Courant*, Professor Ehrlich, the eminent physician and inventor of the celebrated remedy "606," died suddenly on Friday, 20th inst., in his laboratory at Homburg.

Born in 1854 at Strehlen, in Silesia, of Jewish parents, Paul Ehrlich was educated at the Gymnasium at Breslau, and afterwards at the Universities of Breslau and Strasburg, where he graduated in medicine.

Several of his written works had been translated into English, and he had received from England various honorary distinctions, which he resigned on the outbreak of the war. The Nobel prize was awarded to him in 1908.

TETANUS IN SWINE: INTERDIGITAL ABSCESES IN DOGS.

Dear Sir,—During the last few weeks your pages have contained notes on these two conditions, hence, perhaps, a further contribution of experience may be acceptable.

Once only I have seen the most distinct evidence of tetanus in swine. About two years ago, after castrating some pigs, I remarked to the owner that, as they were rubbing their hind parts on a heap of builder's sand, it would be best to shut them up away from it. Some few days afterwards I was called to see these pigs, and two of them undoubtedly had developed tetanus, and subsequently died. The symptoms were unmistakable.

At a veterinary meeting recently the symptoms of interdigital abscess of dogs were described under the heading of "Eczema." Although eczema of the dog's foot does occur, yet surely it is altogether a different affection to that bugbear of canine practice.

Some little time ago I had an exceptional opportunity of observing the condition of abscesses between the toes. The owner of a Pekinese spaniel left her dog with me for six months, while she spent the winter abroad. The dog pro-

duced numerous abscesses from time to time, and various methods of treatment were tried:—curettage, applications of silver nitrate, cutting off the necrotic skin with scissors and painting the cavity with tincture of iodine. Also I had a special vaccine made, and gave the dog two courses of six injections each. None of these methods proved really successful; one pair of toes appeared to become united by cicatricial tissue, and abscesses did not recur at that place, but did so elsewhere.

My present attitude to the truth of the matter is that the condition is caused by traumatic infection from the under surface of the foot, and that it depends largely on conformation—a "splay footed" dog being more liable to the disease. Hence, of course grit, road-tar, stubble, and any prickly ground may be an exciting cause.

Up to now I know of no cure. Has any one tried the actual cautery right through the interdigital space—piercing and cauterising the upper and lower skin and the structures between?

One more instance:—My own Aberdeen terrier suffers in the same way, and when an abscess is developing my wife keeps the dog out of my sight, to save her from veterinary treatment. Perhaps this is wisdom!—Yours truly,

Hurst Green, Sussex.

J. H. RIPLEY.

THE QUESTION OF ARMY RANK.

Sir,—I have been hoping to see in the correspondence column of *The Veterinary Record* other letters in the same strain as those of "M.R.C.V.S." and "Strafe." As one who has been serving over-seas for the past eleven months, leaving a practice to do so, I heartily agree with "Strafe" that it is an injustice to the private practitioner to give civil servants a higher rank. In the very great majority of positions it is not a "virtual specialist in control of contagious diseases" that is wanted, but a man of all-round experience, which is not got under the Board of Agriculture. Referring to the letter of "M.R.C.V.S." it is to be hoped that pressure may be used to obtain the same concessions as those granted to the R.A.M.C. Young medical officers coming almost right from College a few months ago are now captains, whilst vet. officers of perhaps ten or twenty years' experience are still lieutenants. Another point I should like to draw attention to is that Special Reserve officers are to lose heavily as compared to Temporary Commission officers whose first year of service has expired. The latter, I understand, have been induced to continue in the service by receiving five shillings a day more pay than before, and sixty days' pay as a bonus for every year or part of a year they serve. So far as I know no mention has been made of adding to the remuneration of Special Reserve officers. Here again I think there is an injustice to a great many. Because a man has been unfortunate enough to join the S.R. instead of taking a Temporary Commission he loses, roughly, £130 a year. In common fairness, I hold this is a matter that ought to receive consideration. I trust this letter may lead to others expressing their views, and possibly leading to concerted action as suggested by "Strafe."—Yours, etc. V.O.

Sir,—I heartily endorse the opinions expressed by "Strafe" in your issue of the 31st ult.

I think the footnote stating that Vety. Inspectors of the Board of Agriculture are specialists in dealing with contagious disease is very misleading. The private practitioner in the majority of cases holds appointments in his district under the Contagious Diseases Orders, and it is through him that the inspectors of the Board of Agriculture are made aware of the outbreak of contagious disease, when they (inspectors) simply carry out the prescribed routine as regards such outbreak.

All officers of the R.A.M.C. with six months' mobilised service are promoted to the rank of captain, so that it is not too much to ask that the sister profession be treated alike, especially as the veterinary officer is doing three times the prescribed work, owing to the shortage of supply of veterinary surgeons for duty abroad.—Yours, etc.,

PRACTITIONER.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaugh-tered. *
	(a)		(a)		(b)		(b)			(a)	
Gr. BRITAIN.											
Week ended August 21	5	5					14	22		66	314
Corresponding week in											
{ 1914 ...	7	9			2	2	3	3	1	58	347
{ 1913 ...	6	9			2	2	14	28	2	38	704
{ 1912 ...	4	4	3	7	2	2	19	24		34	421
Total for 34 weeks, 1915 ...	412	472			34	63	‡569	‡1241	159	2937	13167
Corresponding period in											
{ 1914 ...	512	555	11	74	72	218	1519	2631	152	2769	28759
{ 1913 ...	373	411			112	288	1894	3826	129	1672	22607
{ 1912 ...	554	630	70	442	120	228	2336	5074	170	2188	28379

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, August 24, 1915

† Counties affected, animals attacked :

‡ Figures for twenty-one weeks only.

IRELAND. Week ended August 21	...	...	...	...	...	...	Outbreaks 3	7	3	34
Corresponding Week in										
{ 1914 ...	...	...	...	...	...	...	1	5	3	23
{ 1913 ...	...	...	...	...	...	...	...	9	4	47
{ 1912 ...	...	...	...	3	...	...	1	...	2	13
Total for 34 weeks, 1915 ...	1	1	...	...	1	3	52	282	173	983
Corresponding period in										
{ 1914 ...	1	1	76	957	...	...	59	385	153	767
{ 1913 ...	...	...	...	...	...	...	96	366	110	660
{ 1912 ...	3	3	21	216	...	...	52	261	172	1454

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, August 23, 1915
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

Veterinary Societies—Addresses.

BORDER COUNTIES V.M.S.

Pres: Mr. H. Barrow, M.R.C.V.S., Ireby, Carlisle
Hon. Sec: Mr. R. Craig Robinson, M.R.C.V.S., Carlisle
Meetings, Second Friday of Feb., June, and October

GLASGOW V.M.S.

Pres. Principal McCall.
Hon. Sec. Mr. J. D. Fulton, 83 Buccleuch Street, Glasgow

ROYAL VETERINARY COLLEGE V.M.A.

Pres: Prof. E. Brayley Reynolds.
Hon. Sec: Mr. B. Gorton, M.R.C.V.S. Assist. Mr. P. R. Turner

ASSOCIATION OF VETERINARY OFFICERS OF HEALTH

Pres: Mr. T. Douglas, M.R.C.V.S., Kilmarnock
Hon. Sec. & Treas. Mr. A. M. Trotter, M.R.C.V.S.,
Moore Street, Abattoir, Glasgow

NATIONAL ASSOCIATION OF VETERINARY INSPECTORS

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COLONIAL SOCIETIES (continued next page)

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Pres: Mr. S. T. D. Symons, M.R.C.V.S., Chief Insp. of Stock
V. Pres: Maj. A. P. Gribben, F.V.O., M.R.C.V.S.
Hon. Sec. & Treas: Mr. Max. Henry, M.R.C.V.S., B.V.Sc. (Syd).
56 Bridge Street, Sydney

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Pres: Dr. Gibbons, M.R.C.V.S., Vancouver,
Hon. Pres: Dr. Hamilton, M.R.C.V.S., Victoria.
Sec., Treas., Registrar. Dr. T. Jagger, V.S., Vancouver.

ASSOCIATION MÉDICALE VÉTÉRINAIRE FRANÇAISE "LAVAL"
Sec: Mr. J. P. A. Houde, Montreal

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Hon. Sec. Mr. Gustave Boyer, Rigaud, P.Q.

VETERINARY ASSOCIATION OF ALBERTA

Hon. Sec. Mr. C. H. H. Sweetapple,
For Saskatchewan, Alta.

ONTARIO V.A.

Pres: Mr. J. H. Tennent, v.s., London, Ontario
Sec. & Treas: Mr. L. A. Wilson, Toronto, Ontario

TRANSVAAL V.M.A.

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Sec: Mr. J. W. Brittlebank, M.R.C.V.S.,

Town Hall, Manchester
Assist. Sec: Mr. W. L. Harrison, F.R.C.V.S.,
 11 Anchor Terrace, Southwark Bridge, S.E.
Treas: Prof. G. H. Wooldridge, F.R.C.V.S.,
 Ryl. Vet. Coll., Camden Town N.W.

Northern Branch:

Pres. W. A. Taylor, (F) Brick Street, Manchester
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71 Smithdown Lane, Liverpool
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Pres: Mr. G. H. Locke, M.R.C.V.S.,
 Grosvenor-street, Manchester
Hon. Sec. Mr. J. W. Brittlebank, M.R.C.V.S.,
 Town Hall, Manchester
Hon. Treas: Mr. E. H. Stent, M.R.C.V.S., Preston-st, Hulme
Meetings, 1st Thursday in April, June, Sept., & Dec.

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Pres: Mr. J. P. Heyes, F.R.C.V.S., Wigan
Hon. Sec: Mr. A. Walker, M.R.C.V.S., Mill Lane, West Derby
Pathological Sec: Mr. D. C. Matheson, F.R.C.V.S.
Meetings, May, July, October, January.

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Pres: Mr. J. Malcolm, F.R.C.V.S., Birmingham
Hon. Sec: Mr. H. J. Dawes, F.R.C.V.S.,
 Camden House, High-st., West Bromwich
Hon. Treas. Mr. J. J. Burchall, M.R.C.V.S., Barrow-on-Soar
Meetings, Second Tuesday, Wednesday, Thursday, and
 Friday alternately in Feb., May, Aug. and Nov.

NORTH OF ENGLAND V.M.A.
Pres:
Hon. Sec: T. T. Jack, M.R.C.V.S., 3 Elmwood Ter, Sunderland
Meetings, Third Friday, Feb., May, Aug. and Nov.

NORTH MIDLAND VETERINARY ASSOCIATION
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Hon. Sec: Mr. J. S. Lloyd, F.R.C.V.S., Sheffield

NORTH WALES V.M.A.
Pres: Mr. Hugh Williams, M.R.C.V.S., Ty Croes
Hon. Sec. Mr. L. W. Wynn Lloyd, M.R.C.V.S., Carnarvon
Meetings, First Tuesday, March and September

SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.
Pres: Mr. J. M. Walker, F.R.C.V.S., Hartlepool
Hon. Sec. & Treas: Mr. F. H. Sanderson, M.R.C.V.S.,
 Victoria Road, Darlington
Meetings, First Friday, Mar., June, Sept. and Dec.

YORKSHIRE VET. ASSOCIATION
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Sec. T. C. Toope, 34 High Street, Dover

CENTRAL V.S.
Pres. Mr. F. W. Willett, M.R.C.V.S., High Street, Staines
Hon. Sec: Mr. H. A. MacCormack, M.R.C.V.S.,
 122 St. George's Avenue, Tufnell Park, N.
Meetings, First Thursday in each month, except August
 and September, 10 Red Lion Square, Holborn, at 7 p.m.

EASTERN COUNTIES V.M.A.
Pres. Mr. T. E. Barcham, M.R.C.V.S., Paston, Norfolk
Hon. Sec. & Treas: Mr. A. C. Holl, M.R.C.V.S.,
 New Buckenham
Meetings, Second Tuesday, Feb., July and Sept.

LINCOLNSHIRE AND DISTRICT V.M.S.
Pres. Mr. O. W. Townsend, F.R.C.V.S.,
 Long Stanton, Cambridge
Hon. Sec. & Treas: Mr. Tom Hicks, M.R.C.V.S.,
 Boston Road, Sleaford
Meetings, Second Thursday Feb., June, and October

ROYAL COUNTIES V.M.A.

Pres: Mr. J. C. Coleman, M.R.C.V.S., Swindon
Hon. Sec. & Treas: Mr. G. P. Male, M.R.C.V.S., Reading
Meetings, Last Friday, Jan., April, July and Nov.

SOUTHERN COUNTIES V.S.

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Hon. Sec: Mr. A. H. Archer, M.R.C.V.S., Southsea, Portsmouth
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Meetings, Last Thursday, Mar., June and Sept.

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Pres. Mr. E. Lyne Dixon, M.R.C.V.S., Margate
Hon. Sec. & Treas. Mr. Theo. C. Toope, M.R.C.V.S.,
 84 High Street, Dover
Meeting,

WESTERN COUNTIES V.M.A.

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Hon. Sec. Mr. W. Ascott, M.R.C.V.S., Bideford
Hon. Treas: Mr. P. G. Bond, M.R.C.V.S., Plymouth
Meetings, Third Thursday, March, July and November

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Hon. Sec. & Treas: Mr. G. Howie, M.R.C.V.S., Alford, Aberdeen
Meetings, Last Saturday in January and August

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Pres: Mr. Reid, M.R.C.V.S., Auchtermuchty.

SCOTTISH METROPOLITAN V.M.S.

Pres: Mr. J. Riddoch, M.R.C.V.S., Edinburgh
Hon. Sec. & Treas: Mr. Jas. Henderson, M.R.C.V.S.,
 Public Health Dept., City Chambers, Edinburgh

WEST OF SCOTLAND V.M.A.

Pres: Prof. John R. McCall, M.R.C.V.S., Vety. Coll. Glasgow
Hon. Sec: Mr. J. F. Macintyre, M.R.C.V.S.,
 19 Bank Street, Hillhead, Glasgow
Hon. Treas: Mr. Geo. W. Weir, M.R.C.V.S.,
 88 Crookston Street, Glasgow
Meetings, Second Wednesday, May, Oct. and January.

COLONIAL SOCIETIES: (see preceding page)**CAPE OF GOOD HOPE V.M.S.**

Pres. Mr. J. D. Borthwick, M.R.C.V.S., Cape Town
Hon. Sec. & Treas. Mr. J. W. Crowhurst, F.R.C.V.S.,
 Longmarket Street, Cape Town

CENTRAL CANADA V.A.

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VET. ASSN. OF MANITOBA.

Pres: Dr. W. R. Taylor, Portage la Prairie
Hon. Sec. & Treas: Mr. Wm. Hilton, Winnipeg

NATAL VETERINARY MEDICAL ASSOCIATION.

Pres. Mr. F. J. Carless, M.R.C.V.S., Mooi River
Hon. Sec. & Treas. Mr. A. Goulé, Eshowe, Zululand

THE VETERINARY RECORD

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THE QUESTION OF ARMY RANK AND PAY.

A member who has taken the trouble to verify his statements, which our correspondents of last week on the subject appear *not* to have done, takes us to task for allowing the "ill-informed letter" to appear in our columns, and directs our attention to the rate of bonuses payable under the Royal Warrant, which have been ruled to apply to officers of the Special Reserve and Territorial Force. The warrant reads:—

"Shall be entitled, on the cessation of such employment, to a gratuity at the following rates:—124 days pay for the first year of service or of any part of a year, and 62 days pay for each subsequent year of service or part of a year."

This alters the relative positions as regards Temporary lieutenants, and in a measure discounts the difference in pay.

Further, our correspondent comments on the "trade union" attitude taken by some members, and asks by what process of mental gymnastics these malcontents reconcile this line of action with their contention that as *professional men* they are entitled to more generous treatment at the hands of the government. To say the least of it, it is "bad form." We regret that we are unable to print the letter in full.

Some months ago we pointed out in this column the probable conditions which led up to the creation of temporary commissions. This surmise has since been confirmed by statements in Parliament. We would now ask, can it be considered unreasonable that in this matter of adjustment of rank and pay precedence should be given to the claims of the R.A.M.C.? Numerically they are probably not less than ten times the strength of the A.V.C., possibly much greater; while the social weight behind them is relatively at least equally great. Again, the strength of our army has been raised to about four times what it was twelve months ago, with all the attendant strain of active service. Is it to be wondered at then that official departments have not kept pace with this development? May we not reasonably expect that the claims of the A.V.C., although it be only one of the smaller wheels in the huge machine, will in turn receive due attention? The R.A.M.C. has been dealt with, we believe satisfactorily, the A.V.C. will probably follow. There are too many in this country to whom the words "the war" carries little meaning beyond their personal inconvenience.

AN UNDIAGNOSED CASE.

I was called out recently to rather an interesting case. The patient was a 10 year old mare. The evening prior to her illness she took her food as usual and appeared in quite her normal condition. The following morning the owner on entering the stable found the mare lying flat in the stall, with head, body and legs greatly swollen, and quite unable to rise.

On manipulating the swollen parts I found them to crepitate and crackle, resembling very much the condition found in black quarter. The body was somewhat cold and responded feebly to the prick of a pin. The pulse was weak and irregular, and temperature below normal. I raised the animal by means of slings but found she hung quite limp in them and was quite unable to take her feet.

I examined the animal for any external lesions but could discover nothing to assist in diagnosis. I had the animal destroyed but was unfortunately unable to make a post-mortem. I shall be glad to hear through *The Veterinary Record* if any member of the profession has ever come across a similar case.

Coatbridge.

JOHN L. TAYLOR, M.R.C.V.S.

MILK FEVER AFTER A BAD CALVING.

By J. H. PARKER, M.R.C.V.S., Faringdon.

It is generally believed by the dairy farmer in this district that if a cow has a bad time calving she will not go down with milk fever.

Last Sunday afternoon, August 22nd, whilst enjoying a game of golf at Frilford Heath, I received an urgent message to calve a cow; found she was a big shorthorn cow, and two legs were protruding beyond the knees from vulva, and as the soles of the calf's feet were pointing towards the ground I knew there was an anterior presentation with the head turned back. I could not find any trace of the head so I removed the right fore leg at the shoulder; still I could not find the head, so removed the other leg. Then I could only reach the ear. Putting a looped rope round the bent part of the neck as near the head as we could get, we drew the head forwards and roped the lower jaw, when the head was easily turned round and delivery was effected.

On Monday the 23rd, a message came that the cow was ill, and I found her showing all the common symptoms of milk fever. We pumped her udder up and she was all right by night.

Whilst on the subject, I would like to know the opinion of some of the members of the profession

as to the cause of milk fever. My own opinion is that it is caused by an anaerobic bacillus which produces a virus in the udder and this being absorbed into the circulation first acts as an excitant and then as a sedative to the brain. By pumping air or oxygen into the udder the action of the bacteria is destroyed, the production of the poison ceases, and if the cow has not been ill too long she can recover from the poisons she has already absorbed from the udder. I find if I can get to cows when they are on the stagger and pump them up, they will rarely go down, and the longer they are ill before being treated the longer they take to recover.

I hope practitioners will give their views for I think the text book theories are exploded.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION. [NATIONAL V.M.A. NORTHERN BRANCH].

The quarterly meeting was held at the Grand Hotel, Birmingham, on Wednesday, Aug. 11. Mr. JOHN MALCOLM, Birmingham, presided, and the other members present were: Messrs. J. J. Burchnall, Barrow-on-Soar; J. Martin, Wellington; W. Grasby, Daventry; F. L. Gooch, Stamford; T. Slipper, Sutton Coldfield; F. H. Gibbings, Nottingham; C. J. Clifford, Shifnall; J. Cormack, Coventry; S. M. Woodward, J. Young, W. H. Brooke, Birmingham; W. S. Carless, Worcester; H. W. Stevens, Kidderminster; A. B. Forsyth, Cannock; and the Hon. Sec., Mr. H. J. Dawes, West Bromwich. There were also present as visitors: Messrs. H. W. Dawes, Sheffield; W. White, Birmingham.

Apologies for absence were received from: Profs. McCall and Mettam; Messrs. E. Ringer, Hobson, R. L. Phillips, L. W. Heelis, W. Tart, E. Hall, F. W. Barling, R. C. Trigger, H. S. Reynolds, R. Hughes, J. A. Gold, C. Byner, J. R. Carless, and others.

The minutes of the last meeting were confirmed.

VOTES OF CONDOLENCE.

The PRESIDENT said that it was their melancholy duty to record the deaths of several old members and friends, and to express their condolence with their families. The first name on his list was that of a very old member and ex-officer of the Association—Mr. George Wartnaby, of Burton-on-Trent. Mr. Wartnaby was not only a very regular attender at their meetings, but he had served the office of President, and was for a number of years their Treasurer. A more honourable and straightforward man he did not know, and his many excellent qualities had endeared him to them all. He moved that a letter of sympathy be sent in the name of the Association to Mrs. Wartnaby and the relatives.

The HON. SEC., in seconding, said that the late Mr. Wartnaby was not only exceedingly popular, but he was also for many years one of the pillars of the Association. A letter was also read from Mr. Trigger, expressing his high appreciation of the late Mr. Wartnaby.

Mr. CARLESS and Mr. BURCHNALL, who were fellow-students with him at the Royal Veterinary College 40 years ago, supported the resolution in feeling terms, and it was carried.

The PRESIDENT: The next resolution of a similar kind has reference to the death of their old friend Mr. Harvey Collett, of West Bromwich. Although Mr. Collett never aspired to any office in the Association he was frequently amongst them, and his kindly disposition won him friends wherever he went.

The HON. SEC., in seconding, said that Mr. Collett and he were the best of friends. An unkind word had

never passed between them, and he was a man of the highest honour and integrity, who would scorn to do anything that was not in keeping with the highest interests of the profession. This resolution was carried.

The PRESIDENT referred to the death of yet another member—Mr. O. Hills, of Leamington.

Mr. GRASBY moved that a letter of condolence be sent to Mrs. Hills. He said they were fellow inspectors in the same county, and he had many opportunities of judging Mr. Hills' character and worth.

The PRESIDENT seconded, and said that he and the late Mr. Hills' father were great friends, the father being one of the best members this Association ever had. The son had proved a worthy successor, and they lamented his untimely death. The resolution was carried.

The PRESIDENT referred in sympathetic terms to the loss sustained by Mr. W. S. Carless on the death of his wife. He said he had gone out of his way to mention the late Mrs. Carless because she had, more perhaps than any other woman he knew, identified herself in many ways with what he might term the social side of the veterinary profession. They would all remember her at meetings of the National Association, whilst on more than one occasion, when this Association had visited Worcester, she had displayed her charms as a hostess. He moved a resolution of sympathy with Mr. Carless and family.

This was supported in appropriate terms by Mr. Gooch, and endorsed by the Hon. Sec., both of whom spoke as friends of the late Mrs. Carless. The resolution was carried.

New Member. On the motion of Mr. Malcolm, seconded by the Hon. Sec., Mr. W. WHITE, Holliday Street Wharf, Birmingham, was unanimously elected a member of the Association.

THE SLAUGHTERING OF IN-CALF COWS.

The HON. SEC. raised the question of the Order of 1915, with regard to the slaughtering of in-calf cows. He would like the opinion of the meeting on the question of culpability in the matter of disobeying the Order. He had just had an interesting experience. A butcher in a large way of business bought a fat cow, which he slaughtered, and the meat inspector saw, on visiting the premises, a calf which had been removed from the cow. The inspector reported it to the police, and a prosecution followed. Mr. Forsyth and he appeared in the case on opposite sides, and they agreed as to the state of development of the foetus, which was about six months developed. The vendor of the cow gave evidence and said he would never have sold her if he had known she was in calf; in fact she was bulling two days before the sale. The bench dismissed the case, because it was almost impossible, especially for a layman, to tell whether a cow was in calf without a proper examination at that stage.

He would like to know when members thought a cow would be obviously in calf.

Mr. GOOCH said it was difficult for anyone to say. There was a custom in some neighbourhoods to serve feeding cows which were intended for slaughter, in order to keep them quiet. Strictly speaking, such cases might be brought under the Order, but he had not heard that it was likely to be done.

Mr. FORSYTH said he did not see this particular animal alive. In other cases, however, he had experienced a great difficulty in deciding when a cow was in calf.

Mr. GIBBINGS: Was the cow condemned?

The HON. SEC.: Oh, no. The inspector merely reported it under the new Order.

Mr. SLIPPER said he knew the vendor of the cow, who was a gentleman not likely to send a cow to the market if he thought she was in calf.

The PRESIDENT said he could quite understand that it would be difficult for butchers to diagnose whether some cows were in calf even when they were six or seven months gone, and even practical men could be mistaken.

Mr. MARTIN thought there ought to be a limit in the Order so far as age was concerned. It seemed a very wide order to expect a man to know when every cow was in calf. Up to three or four months, how could anyone tell?

Mr. BURCHNALL: No man alive can tell.

VETERINARY SURGEONS AND ARMY RANK.

Mr. GRASBY introduced the subject of veterinary surgeons and their rank in the army. He thought men who left their homes and practices, which had often taken them many years to build up, in order to be of service to the country in the war, ought to be offered a better rank than was the case at present. He was not complaining altogether of the pay, because that was not the only thing a veterinary surgeon thought of when he joined the forces at a time like this, but at least in the case of the older men who had been long in practice, they ought to be treated the same as doctors who joined the Royal Army Medical Corps. He begged to move that a resolution be forwarded from this Association to the proper authorities embodying that view.

The PRESIDENT, in seconding, agreed that the veterinary profession should be treated with the same consideration as the medical profession. Men of the highest qualifications and long experience, who had joined the A.V.C. from purely patriotic motives, ought to be given a higher rank than was at present offered them. The Board of Agriculture's permanent officials with five years' service were now going out under the rank of captain, and a man who had been in general practice as long as that or longer was entitled to the same consideration.

Mr. GIBBINGS fully sympathised with the views expressed by the two previous speakers, but he was afraid from what he knew of the War Office methods, that little or no good would result from a resolution of this character. The War Office would think it too insignificant a matter to interfere in. "If you gave a civil veterinary surgeon a captaincy," added Mr. Gibbings, "and he was put in a camp where there was a lieutenant in the regular army, it would be hard on the lieutenant to be under a civil practitioner as captain."

Mr. H. W. DAWES: It is done in the medical profession.

The PRESIDENT: And it is done with the Board of Agriculture's officials, and Indian Civil Veterinarians.

Mr. GOOCH thought that if the resolution said that men with so many years' civil practice should be given the higher rank it would be better. Even if no good came of the resolution, certainly no harm would result, and he therefore supported it.

After some further remarks, the following resolution was carried unanimously:—

"Having regard to the fact that Veterinary Officials of the Board of Agriculture and of the Indian Civil Veterinary Department of five years' standing on joining the Army Veterinary Department are given the rank of Captain, this meeting of the Midland Counties Veterinary Medical Association is unanimously of opinion that private practitioners of equal standing to the officials should be given similar rank."

JOINT ILL:

"SPECIFIC POLYARTHRITIS," "NAVEL ILL,"
"OMPHALITIS NEONATORUM."

By H. W. DAWES, M.R.C.V.S., Sheffield.

In choosing the subject for discussion to-day, I was influenced by two objects: first, in view of the increased

value of stock, both now and in the future, it behoves veterinarians to do all possible to alleviate mortality; second, it is a disease of which the pathology is obscure, and concerning which the reports and views of practitioners are of great value.

Specific Polyarthritis, commonly known as Navel ill, may broadly be defined as a disease affecting young animals shortly after birth, and characterised by a polyarthritis which results from a navel infection. It most frequently occurs in foals, less frequently in calves, and to a lesser extent in lambs; it may arise any time between birth and the age of four to five weeks. Most frequently it is seen between the ages of one to three weeks. The disease has been known for a considerable time, especially on the Continent, although its nature has been misunderstood until quite recently, the condition being thought to be of a rheumatoid or tubercular nature.

The etiology of the disease is open to much question. It is undoubtedly a bacterial infection which has its port of entrance in the navel and many causal organisms have been claimed to produce it. Personally, I believe it to be of the nature of a double infection, *i.e.*, an infection (*primary*) by a specific organism, possibly of the same type as that concerned in "White Scour," which so reduces the animal's power of resistance that it allows of a *secondary* infection with several strains of pyogenic bacilli capable of producing the typical lesions, principally the *S. pyogenes aureus* and *S. pyogenes albus*, which are ubiquitous in nature and very resistant. I maintain that this idea of a mixed infection is supported by the clinical appearance of the disease. In some cases an acute septicæmic form of joint ill is seen in which death occurs rapidly, and in which the lesions are of a septicæmic nature; in others, the common type, when the predominant symptoms and lesions are of a suppurative nature. The pyogenic organisms seem in this case to have predilection seats in and around the joints, although on p.m. they may be found to have produced effects throughout the body.

Whatever the causal organism is, it is undoubtedly widespread, and apparently of a facultative nature; moreover, it is apparently much more common and of greater virulence in some districts than in others. In some places it appears with unfailing regularity each season, and this leads one to the view that in these cases the infection results from a previous case of joint ill.

A specific *micrococcus* has been isolated by Continental authorities from the lesions of affected animals. Others hold that the condition is a Pasteurellosis produced by an organism of the fowl cholera bacillus type.

The seat of infection is the umbilicus, and its very nature in the young animal forms a suitable nidus for bacteria by reason of the necrotic processes which occur during cicatrisation. These include thrombosis of the umbilical vein, suppurative disintegration of the thrombus, and the wholesale dissemination of the foci throughout the blood stream. Moreover, its position on the under surface of the abdomen exposes it to rapid infection.

Other important predisposing causes of infection are filthy conditions surrounding the young animal, the use of a common foaling box, etc., and misguided efforts to ligature and cleanse the umbilicus.

It is still held in some quarters that joint ill is hereditary, and that infection can take place *in utero*, since in some cases the navel appears quite healthy. It is quite possible that a foal born of weakly parents may be of a similar constitution and so show a predisposition to contract the disease, but beyond this I consider the question of heredity to be erroneous; moreover, if hereditary, why should the disease be put down by prophylactic measures?

In a very interesting paper on this subject, read by

Prof. Penberthy some years ago, he drew attention to the fact that "abortion in mares and pyæmia in foals were often co-existent, and that in his experience in a considerable proportion of cases the foals affected were born before the normal period of gestation had ended. There was no room for doubting that in such cases infection occurred *in utero*, and every foal so affected died within a few days of birth." It was, therefore, thought that there was a connection between the two, and that a hamatogenous infection of the foal occurred during gestation. However, in the uterine discharge of a metritis which usually succeeds abortion, enormous numbers of the streptococci group are found, and it is quite conceivable that infection could occur immediately after, or even during birth.

Penberthy also drew attention to the fact that the stallion might possibly act as a "carrier" to the organisms causing infection.

Joint ill sometimes assumes the aspect of an enzootic, and in such cases the virulence of the infective material increases, and every foal in a stud may become rapidly infected. Animals born in more natural conditions, *i.e.*, in the open, appear to possess greater powers of resistance, and it is certainly the case that one seldom sees joint ill appear in foals dropped at pasture. Early foals, again, are more liable to the disease, owing to the necessity of keeping them confined for some time after birth. It is the experience of most practitioners that more cases are seen in colt foals, due no doubt to the fact that in their case the umbilicus is frequently soiled during urination. Occasionally, one meets with a case occurring after cicatrization is complete, and this points to the view that after infection has occurred, the organisms may remain in a dormant condition for a length of time, before becoming active and producing symptoms.

The clinical symptoms of joint ill vary largely, and in my experience we can broadly divide them into two groups:—

(a) The acute septicæmic form, which arises shortly after birth and which, owing to the rapidity of its course, is often not recognised *per se*. In such cases there is high temperature (105° to 106°), great depression and dulness, the animal refuses to suck, and there is often weakness and inability to stand. The navel is usually swollen, moist and inflamed, although no suppurative changes are detected; and often death occurs before joint lesions are seen. This condition is observed in extensive outbreaks of the disease.

(b) The common, or as I term it the *sub acutæ* type is more usually met with. In isolated cases, the owner rarely notices anything wrong before a joint swelling is seen, and frequently the foal is thought to have been trodden on or injured by the mare. The animal is usually a little dull and listless, rests a good deal, appetite may be impaired, although this varies, and there is a rise of temperature, 103.4° . There is lameness of one or more joints, which is of a shifting character and varies from day to day, the joints principally affected are the hock, knee, stifle and fetlock. There is swelling which is hot and painful, increased tension, and this may continue to such a degree that suppuration arises, the swelling points and may burst, and discharge a quantity of pus and synovia.

The local lesions of the navel vary; the umbilical ring is usually enlarged and painful to pressure, the end of the cord is weeping, and on gentle pressure with the fingers may exude a few drops of pus. In other cases there is sinus formation, and a larger abscess may form at the umbilical ring. These symptoms may be complicated by the co-existence of a pervious urachus, which favours the spread of the inflammation along the navel.

The umbilical lesions show great variety, however, and there is no "typical" appearance to guide us. As

stated before, in those cases where the disease arises some time after birth, the umbilicus may have healed and no external signs of suppuration are noted.

The course depends to a large extent on the severity of the disease. In many cases death supervenes, the foal becoming rapidly emaciated and weak, and generalised pyæmia is present. In others the foal remains unthrifty, the swelling of the joints persists, and permanent stiffness and lameness follow.

A common sequel to the condition is a metastatic pneumonia, and similarly gastro-enteritis may appear.

On post-mortem, abscesses may be found throughout the organs, especially the liver and lungs, and along the course of the umbilical vessels on the floor of the abdomen. The joints affected may show all stages of a suppurative arthritis from a mere excess of synovia, which is turbid and opaque, to a condition in which the articular cartilage may be eroded and the bone itself may be diseased.

Prognosis. All cases of joint ill are necessarily grave, and the question of successful treatment depends on the symptoms presented, and to a certain extent the value of the foal itself.

TREATMENT.

From the nature of the disease and its high mortality it is only natural that "Prevention is better than cure," and the success and value of prophylactic measures cannot be over estimated. The elaborate procedure introduced by Nocard and other Continental authorities does not permit of adaptation in general practice. This involves the careful segregation of in-foal mares, disinfection both for some time prior to and after foaling of the foal and dam, together with rigorous isolation of affected animals.

In practice, however, the following lines of procedure may be adopted.

The use of a common foaling box in which all mares are brought to foal should not be permitted; each mare should foal in a separate box which is adequately disinfected before and after foaling. If there is any risk of an outbreak, in addition to disinfection of the premises, the hind parts of the mare should be sponged down with a weak solution of a disinfectant such as creolin or lysol once a day for some days prior to foaling.

Provided that an assistant is present within a short time of birth the navel of the foal should be ligatured, but if some time has elapsed this should not be done, as infection may have already occurred, and ligation then only makes matters worse. The usual practice among farmers of ligaturing the navel with any old piece of string cannot be too highly condemned, and it is a good practice to supply them some time before the mare is expected to foal with a quantity of an antiseptic navel dressing and a stout silk ligature. For the latter idea and other references in this paper I am indebted to the excellent account of the disease which appears in Wallis Hoare's *System of Veterinary Medicine*, a perusal of which will be found of great value to anyone interested in the disease.

If ligatured, the long hairs round the navel should be clipped and the ligature applied about one inch from the body. The cord is then cut evenly across and the surface, after disinfection with a 1-500 "perchloride" solution, should be painted with pure carbolic acid, continuing the application of the acid on the sides of the cord up to the ligature. The navel should afterwards be dressed once daily with the perchloride solution, a handy way being to place a quantity of the disinfectant in an egg cup and immerse the cord in this, finally applying a dusting powder of iodoform and boracic acid 5-10 per cent. all round the area. This dressing should be continued once daily until healing is complete.

Should a case of joint ill arise in a stud, the mare and

foal should be at once isolated, the bedding destroyed, and after a complete disinfection of the box, it should be left unoccupied for some time.

The curative treatment of joint ill has for many years been a source of disappointment to practitioners, the mortality in some cases being 60-70 per cent., and to a large extent this has been the result of an erroneous idea of the etiology. In the first case good hygienic surroundings are essential and the usual condition of these on farms go against successful issues. A good roomy, well-ventilated box should be found, and the bedding kept scrupulously clean. However, this latter should be abundant, as foals soon develop extensive "bed sores" owing to long lying down.

The navel, as the port of entry, should be carefully examined and then thoroughly disinfected in accordance with the above method.

The treatment I am now going to describe is one with which I have had very satisfactory results. I refer to the use of serum, and I am convinced that it is only by following such lines that success is to be attained. The serum used is a *polyvalent* anti-streptococcic serum prepared from various human strains of pyogenic bacilli, and the initial dose I give is from 10 to 20 c.c., depending on the severity of the case. It is given subcutaneously, under aseptic precautions, and the dose is repeated every other day. As a rule I find there is a marked improvement after 3 to 4 injections.

In conjunction with this, febrifuges and tonics are administered. I prefer a mixture of salicylate of soda (30 grains), and potass. iodid. (5 grains), given daily in a little of the mare's milk, and if there is great exhaustion, a small quantity of whisky mixed with a beaten-up egg should be given night and morning. A hypodermic injection of spirits of camphor (30 minims) is of marked value in such cases, especially when symptoms of septicæmia are shown.

The treatment of the affected joints depends on their condition. For the usual pain and swelling, a compound soap liniment containing a quantity of belladonna should be gently rubbed in night and morning, and afterwards, if possible, the joint should be enveloped in cotton wool and a bandage applied. As soon as an abscess appears, it is to be aspirated: for this purpose a fairly long sterile needle should be used, first disinfecting site of puncture with tinct. iodii. Afterwards the joint should be well irrigated with a solution of hydrogen peroxide 1:3, care being taken to evacuate the liquid afterwards. The direct injection into the joint of a solution of "Acetone" has been recommended, but speaking from my own experience, unless suppuration is definitely established the joint cavity itself should not be interfered with, owing to the difficulty of maintaining asepsis.

In cases when, after treatment, some swelling of the joint persists, it should be painted every other day with tincture iodii. and a long course of the salicylate and pot. iodid. mixture given. Later on, if necessary a mild blister may be applied.

In all cases when recovery is apparent, a course of tonics should be given for some time, preferably syr. ferri. phos. (Parrish's Food).

I have here the records of six consecutive cases out of a considerable number treated by the above method this season, and they may be of interest to the members.

Case I. Two-weeks-old filly foal, off hock and near knee joint affected. Great lameness. Temperature 104°. First seen April 13th, when 10 c.c. of serum were injected. Subsequent injections of 10 c.c. on 15th and 23rd inst. Discharged as cured on May 2nd.

Case II. Eight-days colt foal. Near stifle affected. Temperature 103.2, dull, but sucking well. April 20th first seen. 10 c.c. April 22nd, off hock also involved. 10 c.c. Injections of 10 c.c. were given on April 26th, 29th, and May 4th. A week later only a slight stiffness of

stifle remained, and this has since entirely disappeared.

Case III. Four-days-old colt foal. Near knee joint affected, also pervious urachus. May 10th first seen. 20 c.c. serum given. 12th and 14th, 10 c.c. given, and again on the 17th. Discharged May 22nd.

Case IV. Two-days-old filly foal. Off fetlock and hock involved. First seen May 14th. 10 c.c. of serum given. May 15th, foal much worse and very weak. 10 c.c. serum. This animal died next day.

Case V. and VI. occurred on neighbouring farms. Both colt foals about a fortnight old. In each case near hock was affected, and in one a pervious urachus was present. First seen June 3rd. Four injections of serum were made, starting from June 3rd and 5th, and both were discharged as cured in a fortnight's time.

These six cases show the value of treatment by use of serum, especially when one considers the high rate of mortality under other methods. In joint ill we have a disease concerning which there is great need for individual work and report, and I think that it is to the practitioner especially that we should look for enlightenment.

This, Gentlemen, brings me to the end of my paper, of the shortcomings of which I am fully conscious. I thank you for your kind attention, and if the subject serves to produce an interesting discussion, the essayist will have been amply rewarded.

DISCUSSION.

Mr. GRASBY said he was delighted to find the son of their worthy and esteemed honorary Secretary taking such an active interest in veterinary study. They had just listened to an extremely able paper, and one which offered them much food for reflection. Joint ill among foals had long been a source of trouble to country practitioners. He had never tried the serum treatment, and he felt that he had been behind the times, considering how successful Mr. Dawes appeared to have been in the cases he had dealt with. He found his worst cases among the older animals, namely, from one to three months. Sometimes he had consoled himself with the belief that it was not joint evil, as the patient was too old, but it had proved to be that. He was particularly interested in what the essayist said about foals born out of doors being comparatively free from joint ill. It was a matter worth considering.

Mr. GOOCH said a paper such as they had just heard marked considerable progress in the veterinary profession. The colleges seemed to be turning out some very good men, who were going thoroughly into the new treatment of a good many diseases. Indeed they seemed to have arrived a new epoch in the treatment of diseases for which they had to thank the enthusiasm of the younger generation. His experience did not allow him to agree with Mr. Dawes when he suggested that they should do away with foaling boxes. In the Fen district, unless a mare went into a special box she could not foal indoors at all. In most of the big farms the foaling boxes were thoroughly disinfected after use. With regard to preventive steps, it was said that no greasy material should be used, but if it could be applied immediately he found that the antiseptic which had the best results was one which had glycerine as a basis. A good tonic for the dam while the foal was sucking was also a useful protection against trouble.

Mr. MARTIN also congratulated Mr. Dawes upon the excellence of the paper. He had had a good deal of practice in this disease. With regard to the use of a common box, it was always possible to overcome any objection by taking proper precaution for disinfecting and cleaning. Sprinkling a little lime on the floor and spreading clean straw would be found to serve a useful purpose. In the use of caustics for navels, he was bound to say he preferred something dry. He tried chloride of zinc and was never afraid to use it. In cases of

swelling, he painted with iodine, which had both a constitutional and local action. The first thing he gave a foal with joint ill was quinine, and followed that up with a chemical food or cod liver oil.

Mr. FORSYTH said he had thoroughly enjoyed the paper, because it was practical, and in many respects placed an old trouble before them in a new light. He himself had had better results from iodine preparations, both internally and externally, than anything else. With regard to infection, the umbilicus was sometimes looked upon as the principal source, but owing to the rapidity with which it was developed he thought infection was sometimes brought about by ingestion. By disinfecting the udder before foaling he believed he had achieved some success. He was pleased to hear Mr. Dawes had been so successful in his serum treatment, and he himself looked forward to applying the same treatment in the future.

Mr. SLIPPER confessed that the paper would be very useful to him. He had found in the case of young foals from 24 to 36 hours old an acute septic condition which was soon fatal, and he had seen cases in which the cervical bones became affected. His experience was that joint evil occurred more in the best bred Shire foals than in hackneys. A good dressing for the navel was essential. He would like to know what vaccine Mr. Dawes used. There seemed to be no doubt that the vaccine treatment was the proper one.

Mr. STEVENS endorsed the view that the vaccine treatment was the best. He had three cases last year and all three recovered very quickly.

Mr. CORMACK said the subject was a most interesting one to him, and he had given it a good deal of attention. The reason why he came to study it was that he was once in a large breeding district in which joint evil was never treated at all. When a farmer had a case he called in a veterinary surgeon who said the foal had joint ill and it was promptly knocked on the head. His employer told him there was a chance for him to shine, and as they had sixteen cases that season he set to work. He gave a solution of quinine in the mare's milk twice a day, that being the best way without upsetting the foal's digestion. The quinine treatment, of 10 grain doses, did extremely well, and within ten days or so all the foals recovered without leaving any ill effects. Since then he had used nuclein, and had found it successful. He had some doubts as to whether the navel was the source of infection. He had found foals that gave no evidences of the disease until they were what might be called over the age, namely two to three months old, and where there was no trace of suppuration, or swelling or anything abnormal about the navel. It seemed impossible for anything to have got into the navel and to have remained dormant for so long. His experience was that it was best for the foal to be born outside, and the navel not interfered with at all.

Mr. BROOKE regretted that an unexpected engagement at the last moment prevented him from hearing the paper. He was disappointed, but looked forward to reading it in *The Record*. He did not get joint evil in a town practice, but it was a subject in which he was greatly interested, especially as he understood that Mr. Dawes had told them what might be called the new aspect of the trouble, especially in regard to treatment.

Mr. SLIPPER asked whether acute jaundice in foals was due to the same origin.

The PRESIDENT expressed his personal indebtedness to Mr. Dawes for having provided the meeting with such an admirable paper. He had listened with a good deal of pleasure to the discourse on the etiology of the disease. The paper was certainly up-to-date, but he thought there was still room for a good deal of work on the etiology of joint evil. Pus organisms were freely mentioned as a cause of the disease, and it seemed as if they would not be far wrong if they ascribed the cause

to some of those organisms. Mr. Cormack reminded them that some owners resigned themselves to fate, and did little or nothing in cases of joint ill, but if they met with the same success as Mr. Dawes he did not think there would be many cases left alone in the future. Personally, he knew very little about the subject, as his experience did not lie in the direction of breeding. Indeed, he knew so little that he dare not venture on an opinion, but he had heard of many failures. In speaking of the curative treatment by serum, he noticed that Mr. Dawes did not say anything about immunisation. There appeared to be a good field open for immunisation against this disease, and he thought it was a line of treatment that would give very good results.

Mr. DAWES, replying to the discussion, thanked the various speakers for the kind things they had said of his little effort, and especially for the sympathetic manner in which they had received the paper. The criticism had been exceedingly generous and he hoped the discussion would be found to be profitable. The main reason why he had taken an interest in this disease was that everybody, apart from professional men, thought that treatment was absolutely futile. Owners and others would have nothing to do with joint ill, and so there was an opportunity for the practitioner, and especially the young practitioner, when he came into contact with these cases, to justify himself. A case of joint evil that recovered was a very good advertisement and it was the kind of advertisement that enabled the young practitioner to get on. He once spent a vacation with Mr. Hughes, an old member of this Association. It was in a very large breeding district, and he was struck with the apathy which farmers showed towards the disease, notwithstanding the high mortality rate.

The serum he used was polyvalent, as there were several organisms concerned. It might be one or the other, and there was a chance of hitting on one of them. He found the age of foals affected differ very much. He thought it depended on the season and the type of disease. If a mare foaled outside, his rule was not to interfere with her, but to leave her to nature absolutely. He only interfered when he had a mare under what he might term unnatural conditions. He agreed that it was difficult to get complete disinfection on farms, and if a mare foaled inside he thought it was best to let her foal in her own box, instead of putting her in a special foaling box. A special foaling box offered greater sources of infection.

The swelling in the thigh, to which one of the speakers had referred, was not uncommon. It was generally a localised trouble which was dealt with before the patient had time to develop joint symptoms. With regard to contact, he regarded umbilical infection as the only one possible. In these cases when the disease developed some time after birth. It was quite feasible for infection to occur in that way, and the foal be strong enough to resist it, but if it was not strong enough the disease might show itself later on. The serum he used was from the Lister Institute. The serum treatment of joint ill was in its infancy. Very few people had tried it and he had heard of some people who had tried it and given it up.

In answer to Mr. Slipper, he thought acute jaundice had to do with joint ill. It was a symptom of the disease and was part of the general disorganisation. He had tried Nuclein, but had had disappointing results. Probably that was only his bad luck. He looked upon spirits of camphor as the finest stimulant for septicæmia, given in a hypodermic injection of anything from 10 to 30 minims. He had heard of people who even regarded it as a specific. A foal might become infected actually in the process of birth; at least cases arising within twelve hours seemed to prove that the foal was infected either at or during birth. He had not noticed, as another speaker suggested, that infection was due to the stallion acting as a carrier. If that theory held good, they would

surely find the progeny of one stallion more liable to joint ill than another, and he did not think that was the case.

He quite agreed with Mr. Malcolm that there was room for experiment in regard to immunisation. It was a subject that offered plenty of scope in that direction, and demanded better attention than it had received in the past. He could conceive nothing more hopeless than the position of the man who continually failed in his treatment of a particular disease. Considering the high value of stock to-day, the study of etiology of joint ill was worth pursuing.

He had been asked his opinion as to the course of infection, and he must say that his view was that it was purely a hæmatogenous infection. A post-mortem examination would reveal lesions in the lungs and in the liver, and in the septicæmic form death generally ensued in a short space of time. He thought there was more than one organism at work.

On the motion of the President, seconded by Mr. Gooch, a hearty vote of thanks was accorded Mr. Dawes for his paper, and he was requested to allow it to be published in full with the report of the meeting.

Mr. DAWES, in acknowledgment, said he had been sufficiently rewarded for such trouble as he had been put to by the interest shown in the paper, and by the admirable discussion it had evoked.

The Council, who sat previous to the general meeting, presented their report. They recommended that the next quarterly meeting be held in Birmingham, and that the subject for discussion be "Some Veterinary Instruments and their uses." Mr. Gooch had kindly consented to introduce the subject, and the hope was expressed that other members would bring any special instruments to the meeting and explain their use.

The PRESIDENT moved that the report be accepted, which was agreed to, and the recommendations made were accepted.

SPECIMENS.

Mr. WHITE showed a tumour removed from the penis of a cob by the Williams method. A feature of the operation was that there was very little hæmorrhage, and the patient was doing well.

A cervical vertebra and the knee bone of a hunter were shown by Mr. Grasby.

Mr. YOUNG exhibited a remarkable case of necrosis of the os corona: also the rib of a horse which had been curiously affected.

Mr. WOODWARD exhibited an interesting fracture of the humerus.

At the close of the meeting the members had tea together, as usual.

H. J. DAWES, F.R.C.V.S., Hon. Sec.

NORTH OF IRELAND VETERINARY MEDICAL ASSOCIATION.

(NATIONAL V.M.A.—IRISH BRANCH).

A general meeting was held in the City Abattoir, Stewart Street, Belfast, on Friday, 20th August, at 7.30 p.m.

There were present:—Messrs. W. C. M. Smith (President), Howard McConnell (Treasurer), Frank McRoberts, John McLean, A. M. Crighton, J. Ewing Johnston, and J. A. Jordan (Hon. Secretary).

Apologies were received from Messrs. J. J. Ross, Belfast; J. Marks, Newry; J. McKenny, Dublin; and W. P. Walsh, Magherafelt.

The minutes of the last meeting were read, adopted, and signed by the President.

The question of arrears of subscriptions was discussed at some considerable length, and it was ultimately decided to request the Hon. Secretary to remove a number of names from the list of membership.

The usual routine business having been transacted, a healthy discussion took place on Mr. A. M. Crighton's paper, "Common Colics of the Horse," in which all present took part.

Mr. HOWARD MCCONNELL referred in sympathetic terms to the loss sustained by the President on the death of his elder brother. The late Mr. Smith, he said, identified himself very closely with all matters pertaining to agriculture, especially the horse-breeding industry. He was exceedingly popular, and a more honourable and straightforward man he never knew.

The PRESIDENT replied in feeling terms, expressing his high appreciation of the kind words spoken.

The members met at refreshments, and the usual votes of thanks having been proposed and suitably replied to, a very enjoyable and successful meeting was brought to a close.

J. A. JORDAN, Hon. Secretary.

Personal.

Mr. P. J. HOWARD was awarded first in the two-year-old filly class, at the Co. Clare Agricultural Show at Ennis.

Mr. W. W. PEGGIE, Biggar, judged the light horse section at the annual show of the Biggar Farmers' Club.

DUTIES IN THE A.V.C.

Sir,—In the circular sent to members of the profession who are desirous of joining the A.V.C. there is a query: "Are you a good horseman?" Does this refer to riding ability or professional skill? As the question is very vague—if it means the former, Why? As a man may be a thoroughly up-to-date practical veterinary surgeon, yet no rider.

Can you inform your readers through the medium of your paper, what are the duties of a veterinary surgeon in the army outside his professional occupation? For instance, has he to drill, etc.? The want of such information is keeping many members from going.—I am, Sir, sincerely yours,

Sept. 1st.

"CURIOSITY."

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, August 28.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temporary Lieutenants:—

G. G. Pook. Dated July 25.

H. H. Bishop. Dated July 30.

M. Sparrow. Dated Aug. 1.

R. B. Coutts. Dated Aug. 2.

Aug. 30.

To be temp. Lieut.:—W. P. B. Beal. Dated Aug. 9.

Sept. 1.

To be temporary Lieutenants:—

J. J. McGrath. Dated Aug. 18.

A. H. Clapp, F.R.C.V.S.; W. McQuiston. Dated Aug. 20.

Sept. 2.

To be temp. Lieut.:—S. Hirst. Dated Aug. 16.

Aug. 26.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Lieut. J. Bell to be temp. Captain. Dated Aug. 27.

Aug. 27.

SPECIAL RESERVE OF OFFICERS.

To be Lieuts. (on probn.):—

F. F. Horton. Dated Aug. 9.

J. M. Culhane. Dated Aug. 11.

The following casualty in the Mediterranean Expeditionary Force is reported:—

DIED—Lieut. C. H. Lambert.

Action for loss of Mare—wrongly served.BRAMALL *v.* WINGFIELD.

Before His Honour Judge Denham Benson, at the Sheffield County Court, on Friday, August 13th, an action for damages, £55, was heard in respect of the negligence of a groom, whereby a mare belonging to the plaintiff was wrongly served by a stallion, receiving injuries from which the mare died. For the plaintiff, Mr. Arthur Neal; for the defendant, Mr. J. E. Wing.

Benjamin Bramall, the plaintiff, said he was a farmer, and had bred foals for the last twenty years. The mare in question was eight years old, and was a good half-legged mare. She foaled last on May 9th. It was a usual practice to put mares to the horse again soon after they had foaled. On the 19th of May he sent the mare by his son to be served by the stallion, Bar-one Harold, by which stallion she had had three foals previously. When his son came back with the mare plaintiff noticed that she came in with her head down, and the son seemed to have job to get her along. She came into the yard crouching, and dropped down as soon as she got in, sweating badly, and shivering. He got her up, gave her some medicine, walked her about a little, then put her in a loose box, and sent for Mr. Sampson, v.s., Sheffield. Mr. Sampson came and gave her medicine. His son and himself applied hot blankets until two o'clock next morning, when she died. She had returned from being served about 6.30 p.m. He did not see the mare opened, but later he saw the state of the intestines. Mr. Fletcher, v.s., made the post-mortem examination.

On the 24th May he saw the defendant, and told him that the mare was dead, and that the cause was that the horse had served her by the wrong passage. Defendant said he could not think so, and fetched the man, who said he could "nearly swear that the mare was served properly."

Plaintiff said he valued the horse at £55. The foal she had had ten days previously was still living, and had to be hand fed.

Cross-examined by Mr. Wing: This mare had been served four times. So far as he knew defendant did not travel the stallion. Plaintiff had never had one of defendant's cards, and had never seen one. He had not taken the mares himself. His son was not riding the mare when he returned, as she was not fit to ride. The first communication he made to defendant was on May 24th, Whit-Monday. The mare died on May 20th. He did not give notice to defendant of her death until May 24th. When he saw defendant on Whit-Monday he did not say anything about half value, but said he could not stand the job himself. When defendant said to the man "he says the mare has been served the wrong way" the man replied, "I'll not have that."

Clifford Bramall, a son of the last witness, said he had taken mares to the horse twice before. He took this one to the stallion named. Examined by Mr. Neal, he said he had not seen the groom before. When the horse mounted it did not stay on more than about half the usual time. In going home he got on the mare's back and rode her about a mile, and then had to get off and lead her.

Mr. Wing: When the stallion first came out the mare was nasty. The groom sent a man for the hobbles, and

whilst the man was away the horse was presented to the mare again and she was quiet. He did not notice anything unusual and went away under the impression the mare had been properly served, but could not see as he was standing at her head.

Stephen Ernest Sampson, a veterinary surgeon, said he was professionally engaged by both parties, and attended the Court on subpoena. He was summoned by the plaintiff on May 19, at about 6.15 p.m. He found the mare in a loose box down on the straw. She was in a state of perspiration, breathing heavily and in continuous pain. Her pulse was running down, and her temperature two to three degrees higher than it should be. After examining her he found she was in a moribund state. When he saw her she had been served a short time previous, but he thought something was wrong at the time of service, and suggested a twisted bowel. He gave her a hypodermic injection and a draught; left further supply of medicine and ordered fomentations to abdomen. He had to go to Mr. Wingfield's afterwards, and he told him that the mare was very ill and would probably die. He thought the mare was well worth £60. He did not make the post-mortem himself as both plaintiff and defendant were clients of his. He suggested that Mr. Fletcher, v.s., should do so.

By Mr. Wing: It was not suggested to him that the mare had been wrongly served, and he was not suspicious. It was reported to him that she kicked while being tried. She showed symptoms of acute abdominal pain, and he thought this might arise from a twisted bowel. A mare that had given birth to a foal ten days previously would not be in a weak state. Practically every mare was served after nine or ten days after birth of foal, except when foal is born too early in the season. If the mare was served by the proper passage there could be no penetration into the rectum from the vagina without rupture of vagina.

Tom Cooper Fletcher, veterinary surgeon, Sheffield, said that on May 20 he examined the carcass of the mare at the slaughter place of Messrs. Young & Sons. On first making the opening into the abdomen he saw a rupture of the bowel had taken place by the presence of faeces in the abdominal cavity. He next proceeded to trace the rupture, and found a perforation in the rectum, about 10 inches from the anus. The rupture had allowed the faeces to escape into the abdominal cavity and set up peritonitis from which the animal died. He examined the vagina and uterus, and found them both intact. There was no rupture of the perineum. From the appearance of the genital organs the mare was in a good condition to be served. The rupture could only be caused by injury. It might be caused by the insertion of the genital organ of the stallion into the wrong orifice.

Cross-examined by Mr. Wing: The injury which he found could be caused several ways. It was sometimes caused to pit ponies by abuse on the part of boys with broomsticks, etc. Also by a calculus or stone in the bowel being lodged at that particular part and not getting through the anus. It was impossible it should be caused by kicking when being served. He would not say definitely that the mare was served by the rectum, but that was his opinion. He would not expect to find any blood on the horse, as the horse would not stay in long enough for the blood to accumulate. There might be traces of blood which would be discovered on closer examination than the ordinary man would take. She would show signs of having been wrongly served within about half-an-hour, according to the size of the rupture. The anus would clean the penis upon withdrawing.

FOR THE DEFENCE.

Mr. Wing submitted that the plaintiff had shown no evidence of negligence. He called

John Francis Ogden, a groom in the service of the defendant, who had had considerable experience extending over nearly ten years. Witness described the service, which was in the usual form, and denied that there was anything improper or unusual about it. He had no doubt about this.

Cross-examined by Mr. Neal: If a groom knew his business he saw that the horse went in the right place, and it was carelessness if it went in the wrong place. The mare left defendant's place alright, and he did not know until Whit-Monday that it had gone wrong.

Fred Wagstaff, a farm hand, corroborated the description of the service. He had nothing to do except watch, and stood about three yards away.

Henry Wingfield, the defendant, examined by Mr. Wing, said he was the owner of the stallion, Bar-one Harold. He had had the horse about five years. It was seven years old. He did not travel him, but mares were brought to the place. On May 19 he was about 30 yards away when plaintiff's mare was served, and saw the second time the mare was presented. It seemed to be an ordinary good service. He described the meeting with plaintiff on Whit-Monday, which was the first time he had heard it suggested that the mare was improperly served. Mr. Bramall said he would have to stand something as he could not bear it all. He told Mr. Bramall that the mare was served properly, and that he himself had lost two cows that week and had to bear the loss himself.

Cross-examined by Mr. Neal: When Mr. Sampson told him the mare was ill he did not suspect there was anything wrong with the service, and he did not know that she died of a rupture.

Mr. Wing, for the defence, said that the particulars supplied were too general. Mr. Sampson was not present at the post-mortem, and from his observations it never appeared that there had been any wrong service, while Mr. Fletcher had said, from his observations he could not say definitely that the mare had been served by the rectum.

Mr. Neal, for the plaintiff, said that on the facts there was only one inference to be drawn. There was no evidence of other injury, and the mare becoming ill as she did, it was clear that she suffered during the service.

In giving judgment, His Honour said the true inference to be drawn was that there was some negligence. Here you had a mare that was all right when leaving home, yet within a short time after service was evidently in suffering and eventually died. The post-mortem showed that she had a perforation in the rectum, about ten inches from the anus. There was no evidence that the mare had been served in the right way. He, therefore, found for the plaintiff for £45.

The Work of Paul Ehrlich.

Unlike Pasteur and Koch, Ehrlich seems to have done nothing in the investigation of animal diseases, but his work has done much in the elucidation of pathological problems in several directions, and has already borne fruit in veterinary work.

The following extracts are from an appreciation in *The Lancet* of August 28th.

Almost from the beginning of his scientific studies he devoted much attention to the chemical aspects of medicine, especially as to the action of chemical substances on living bodies. He commenced an investigation as to the results produced on living cells by the injection of aniline dyes, and his earliest researches into the methylene blue reactions of living nerve substances were published 30 years ago. It is probable that from

these researches came his great interest in bio-chemistry and his conviction that in a fuller knowledge of the chemistry of living bodies we should find the clue to many of the problems of pathology. He recognised that any true advance in therapeutics must be preceded by an understanding of the true action of drugs. His activities took many directions of investigation, but his theory of work remained the same. Possessed of the truly scientific spirit in the highest degree, his aims were yet consistently practical and utilitarian, and even speculative and highly involved hypotheses had a practical aspect, and were often used simply as a scaffolding upon which to build further advances in experimental work. It is this aspect of his energies which have served to secure for him a world-wide acknowledgment and recognition during his life-time such as few scientific men achieve. This practical bias of mind puts Ehrlich in company with Pasteur, Lister, and Koch, whose work he continued and amplified.

He was a pioneer in the study of hæmatology. By his careful work on the effects of dyes on various constituents of the blood cells, both red and white, he not only put the study of blood diseases on a scientific basis, but also did perhaps more than any other biologist to elevate the importance of the investigation of cellular reactions and to promote careful research into what is now a special branch of biology under the name of cytology. The whole structure of modern hæmatology and all methods for the cytological investigation of exudates, now so valuable in diagnosis, are the direct outcome of his original studies. The use of methylene blue injected *intra vitam* as a means of studying oxidation processes in the body, although a commonplace of the text-books of physiology, is perhaps less generally known but is none the less a striking original piece of work.

Until his introduction of salvarsan Ehrlich was perhaps most widely known for his "side-chain" theory. Ehrlich did not attempt to give a real explanation of the facts in connexion with immunity, but he showed that very many of the problems of infection and immunity were closely allied with the action of drugs. He pointed out what had indeed been known before but had not been appreciated as it deserved, that all antiseptics were not equally active with all micro-organisms; he showed that an antiseptic capable of destroying one germ might prove useless in the very same strength against another bacterium, though another antiseptic, powerful against the second microbe, might prove unavailing in the same strength against the first. Then he showed that the same was true of all drugs acting on living bodies; hence it followed that there must be some condition present in the living cells of the body which enabled a drug or an infecting microbe to affect that living cell. From this arose Ehrlich's "side-chain" theory; and he devised some striking diagrams which were intended to enable others to understand his theory, but which were only too often taken to be true representations of what took place in infections or chemical reactions on living cells. Once it has been recognised that the phenomena of immunity are best explicable as the results of chemical reactions, we are provided with a starting-point for the investigation of the mode of action of the substance in the body which causes the immunity, and the formation of antibodies for therapeutic use has gone far to support Ehrlich's theory. The side-chain theory of Ehrlich has now become classical, and Professor Adami has rather happily pointed out that as by Mendelejeff's theory chemists and physicists have been able to predict and discover new elements, so by the side-chain theory Ehrlich and his followers have been able to predict the existence and properties of a series of chemical substances. It may be said that this theory is complex; that is true, but it must not be forgotten that a protein molecule is an exceedingly complex body!

for instance, it has been estimated that the molecular weight of haemoglobin is over 16,000, and that the protoplasm is much more complex still.

Another of Ehrlich's practical contributions to the study of immunity, and an important one, was his brilliant work upon the standardisation of diphtheria antitoxin. Ehrlich's solution of this question was a masterpiece of exact investigation, and remains the only practical method of antitoxin measurement and dosage.

The introduction of salvarsan brought Ehrlich's name before the public. It was no haphazard discovery, but it was based on a long series of investigations proceeding along well-defined lines. A necessary corollary of the side-chain theory was the idea that a living cell, be it a cell of the body itself or of an invading microbe, was susceptible of certain chemical combinations, and, therefore, if it were to be effected by any drug, that drug must possess certain chemical attributes or no effect would be produced. From this basis Ehrlich started on an investigation of a cure for syphilis. He aimed at some substance which should destroy completely all the spirochaetae pallidæ in the body. He started from the fact that arsenic had been used with success in the treatment, and he designed to obtain a substance, which, while causing the minimum of harm to the human body, should be a potent agent in destroying the spirochaeta. He gave directions to those chemists who assisted him to prepare certain chemical substances, thus reversing the usual process, where the chemist invents chemical substances which he offers to the physician for trial. Experience has confirmed the value of Ehrlich's work.

Ehrlich's life has been full of great and useful achievements. Honoured by many countries and universities and a winner of the Nobel Prize, he was a benefactor of

mankind, and we gladly pay homage to a life spent in advancement of knowledge, the saving of life, and the lessening of suffering.

Dr. C. H. Browning, Director of the Bland-Sutton Institute of Pathology, Middlesex Hospital, writes in *The British Medical Journal* :—

"It is seldom given to one man by his discoveries to revolutionize the outlook on five or six different departments of knowledge and to open up as many unknown paths along which multitudes of others may make rich journeys of discovery. Thus, his investigations on the staining of the leucocytes laid the foundation of modern haematology; his observation that methylene blue possesses an elective affinity for nerve endings has been the starting point of a whole school of highly fruitful neurological research; it was Ehrlich who discovered the acid-fast property of the tubercle bacillus and who devised the method of staining this organism which is practically that now in everyday use, and without which, as Koch himself admitted, the demonstration of the organism would have remained an academic accomplishment instead of becoming one of the most valuable diagnostic procedures in medicine. Similarly, by his work on the standardizing of diphtheria antitoxin Ehrlich placed the dosage of antiserum on a scientific basis, without which von Behring's great discovery would probably have failed in its wonderful achievement. Were I to attempt to characterise in brief the genius of Ehrlich, I should say that it consisted in two striking characteristics—his faculty for escaping the trammels of error in past work, and his capacity for bringing into association as the basis for experiment ideas which purely critical minds would tend to dismiss as fantastic."

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended August 28	6	6			2	2	11	19	2	56	175
Corresponding	1914 ...	6	9	3	17	1	2	2	1	52	180
week in	1913 ...	8	9			3	3	18	29	44	505
	1912 ...	12	13			3	4	12	20	30	522
Total for 35 weeks, 1915	418	478			36	65	1580	1260	161	2993	13342
Corresponding	1914 ...	518	564	14	91	73	219	1521	2633	153	2821
period in	1913 ...	381	420			115	291	1912	3855	129	1716
	1912 ...	566	643	70	442	123	232	2348	5094	173	2218

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked: Middlesex 1, Stafford 1. Board of Agriculture and Fisheries, August 31, 1915. ‡ Figures for twenty-two weeks only.

IRELAND. Week ended August 28	...	...	...	...	...	...	Outbreaks	1	8	2	17
Corresponding Week in	1914 ...	...	...	...	...	...	3	5	5	52	
	1913 ...	...	...	...	...	...	2	9	2	15	
	1912 ...	...	...	3	20	...	...	...	...	5	28
Total for 35 weeks, 1915	...	1	1	...	...	1	3	53	290	175	1000
Corresponding period in	1914 ...	1	1	76	957	...	...	62	390	158	819
	1913 ...	...	...	...	...	...	...	98	374	112	675
	1912 ...	3	3	24	236	...	...	52	262	177	1482

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, August 30, 1915
 Note.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

THE VETERINARY RECORD

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FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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VOL. XXVIII.

ARMY RANK AND PAY.

Since writing last week, we learn that official treasury sanction has been given for promotion of all Temporary Commissioned Officers who have given satisfaction, after one year's commissioned service, to the rank of Temporary Captain, with an increase of pay to 17/- a day together with the allowances pertaining to the rank. The previous regulation of increase of pay by 5/- a day has been cancelled: the increased allowances pertaining to captain's rank equalise matters.

MILK FEVER.

In a clinical note we published last week, Mr. J. H. Parker asks the opinions of practitioners as to the cause of milk fever. This is a very old question which, in some men's minds, has lost much of its former interest. In the last century, we sought the cause of milk fever with the ulterior object of finding a reliable treatment for it. To-day we have a treatment which in its results is so far in advance of any of the old ones that many practitioners regard it as perfectly satisfactory. Some of these men are inclined to regard the causation of milk fever as of little moment, as we now have a successful treatment.

Others have not lost interest in the problem; and from time to time, especially in the Continental journals, we see articles upon it. The great defect of these—as of the old discussions on the subject in the pre-Schmidt days—is that they consist mainly, if not wholly, of either theoretical arguments or mere statements of opinion incapable of verification. But it is conceivable that even this may some day lead us to the truth.

Apart from purely scientific interest, we have two good reasons for desiring to know the cause of milk fever. In the first place, the knowledge might help us as regards prevention—a subject which at present affords room for divergent opinions. And it might lead to further improvements in treatment. Good as we all admit the udder treatment to be, we have still a not inconsiderable proportion of failures with it. It is not impossible that we might find a substitute; it is very possible that we might learn to supplement it advantageously.

A question which may be discussed without reference to the causation is the value of auxiliary measures in conjunction with the udder treatment of milk fever. Many men use stimulants hypodermically; and the practice seems reasonable in certain cases. Others, including high authorities, speak well of the hypodermic use of adrenalin—indeed, there are grounds for thinking that adrenalin is not nearly so much used in milk

fever as it should be. Most practitioners have tried one or other of these methods; and their results would be valuable. Much as we have learned of late years regarding milk fever, we have still a great deal to learn.

THE SPECIFIC DISTINCTION OF THE DOG AND CAT FLEAS.

Although it has been shewn by Rothschild that the fleas of the cat and dog are specifically distinct, little information concerning this point has appeared in the veterinary press. Under these circumstances the following descriptions and synonymy extracted from a paper, "A synopsis of the British Siphonaptera," by the above distinguished entomologist, and which appeared in the *Entomologists' Monthly Magazine* for March, 1915, are not without interest.

Kingdom -	-	Animalia.
Sub-kingdom -	-	Arthropoda.
Class -	-	Insecta.
Order -	-	Siphonaptera.
Sub order -	-	Integricipita.

The anterior portion (=frons) of the head not overlapping the posterior (=occiput) dorsally.

Family—PULICIDÆ.

Eyes well developed. Antennal groove closed. Labial palpi with four or less segments, apex of terminal joint obliquely truncate. Central abdominal segments with one row of bristles, no spines on edge of abdominal segments. First segment of midtarsus always shorter than the second. Hind coxa with a patch of spines on the inner side.

Sub-family—PULICINÆ.

Club of antennæ asymmetrical, very slightly segmented on lower side, first segment of club lanceolate or spatulate; first midtarsal segment much shorter than second. In British species frons without tubercle.

Genus—CTENOCEPHALUS, Kolen (1859).

Genal comb horizontal consisting (in British species) of seven or eight spines on each side and one at the apex of the genal lobe, the spines pointed and recurved. A strong incrasation from the antennal groove upwards. Prothoracic comb of about 16 to 18 teeth. Six species are known, four being purely Ethiopian and two almost cosmopolitan.

CTENOCEPHALUS CANIS, Curtis (1826).

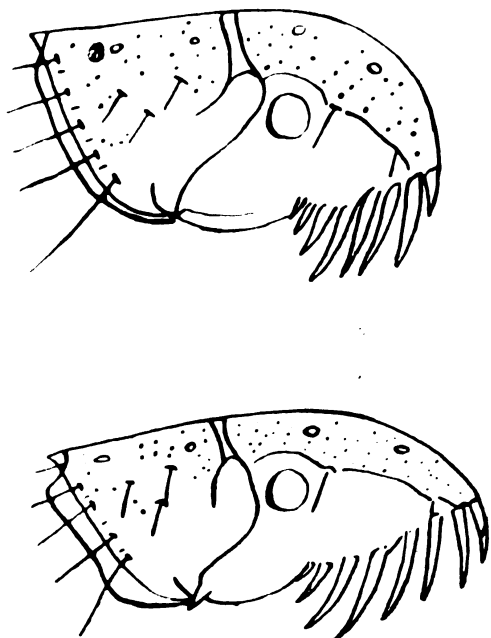
Frons strongly rounded in both sexes. Stigmata large. Distance from frontal corner across eye to

anterior edge of antennal groove equal to the distance from the eighth genal spine to the vertex.

Male. Clasper with one sole-shaped flap beneath which there is a small triangular process. The flap bears numerous hairs along the edge, with the exception of the basal third of the dorsal margin and the basal three-fourths of the ventral margin, which are devoid of hairs and more strongly chitinized. Manubrium straight and narrow, widened at the apex into a spatula.

Habitat.—Europe, Africa, Asia. Hosts; Dog, cat, and occasionally other animals, as well as man. It is far rarer than the following species.

Synonymy.—*Pulex irritans*, Linnæus (partim); *Pulex canis*, Curtis; *Pulex martis*, ? Walker; *Ctenocephalus novemdentatus*, Kolenati; *Ctenocephalus enneodus*, Kolenati; *Pulex serraticeps*, Gervais and Taschenburg; *Pulex canis*, Dale, Verrall, Theobald, Rothschild, Mearns, Evans; *Ctenocephalus canis*, Shipley, Gibbs and Barr, Rothschild, Bascot, Patton and Cragg, and others.



Heads of dog flea (above) and cat flea (below). Females. From Rothschild *Novitates Zoologicae*, vol. xii., 1905.

CTENOCEPHALUS FELIS, Bouché (1835).

Previously usually confounded with *canis*, differs in its much longer head, the distance from the frontal corner across eye to the anterior edge of the antennal groove being almost one-fifth (in the male) to one-third (in the female) longer than the distance from the eighth genal spine to the vertex. The head is much more pointed, the spines of the genal comb and the spine at the apex of genal lobe longer than in *canis*, especially the first spine of the comb. Abdominal stigmata smaller, hind tarsus slenderer, and the stylet also more slender. Bristles on metathoracic epimerum and on hind femur fewer, while the prothoracic comb usually contains one or two spines more than in *canis*.

Male. The non-hairy portions of the margin of flap are shorter and the manubrium is much less widened at the apex than in *canis*.

Habitat.—Cosmopolitan. Hosts: Cat, and many other carnivora, occasionally on man and rodents. Very common on the domestic dog and cat.

Synonymy.—*Pulex irritans*, Linnæus (partim); *Pulex felis*, Bouché; *Pulex serraticeps*, Gervais and Taschenburg; *Pulex felis*, Walker, Dale, Verrall; *Ceratopsyllus rufulus*, Weyenburg; *Pulex nasua*, Weyenburg; *Pulex obscurus*, Weyenburg; *Pulex concoloris*, Weyenburg; *Ctenocephalus serraticeps marina*, Tiraboschi; *Ctenocephalus felis*, Rothschild, Gibbs and Barr, Shipley, Bascot, Russel, Patton and Cragg, and others.

A. W. N-P.

A CURIOUS LAMENESS.

HENRY TAYLOR, F.R.C.V.S., Haywards Heath.

The patient is a grey hunter about 15 or 16 years old, and is a great favourite with his owner on account of his sterling qualities, notwithstanding his age. In the month of March, 1914, he fell lame from "cab-horse lameness" in one of the fore legs, for which he was blistered twice without rendering him sound, and then later on by deep point firing which had the desired effect, although the enlargement at the head of the suffraginis still persisted. At the end of the 1915 hunting season he sprained the perforatus and perforans tendons of the near hind leg just above the fetlock, and for this he was fired and blistered, rested, and then turned out to grass. As far as that leg is concerned he became sound, but whilst running out he is said to have developed the curious lameness which is the subject of this article; though according to the groom this curious action of the leg was noticed by him in a slight degree before being turned out. In any case it must have developed during that period.

When seen by me in the early part of August, the horse on being brought out of the box did not seem very lame, but the action at once denoted something unusual. The stride of the off hind leg (not the one on which he had been fired) was probably six inches shorter than that of the corresponding leg, the toes of both hind feet were dragged along the ground, but in the case of the affected limb there was then a quick elevation of the foot to a height of about 18 inches, resembling a kind of stringhalt; afterwards the foot was placed on the ground with a drawing-back motion, as if the animal had a seedy toe, but coming to the ground with more force than usual. The croup was suddenly elevated during the jerking up of the leg. Whilst standing, the horse did not appear to favour the lame leg; the lameness was therefore not a supporting leg lameness, nor was there any heat or pain to be detected anywhere.

Diagnosis. By the action one judged that there must be an inco-ordination of the muscles of the hip, but the question was which muscles, and it was only after a very extended examination that the real cause of the lameness was discovered.

The first point noticed was a disparity in the contour of the thigh just below the tuber ischii, though this disparity was so slight that I had overlooked it two or three times. It was detected by standing at the side of the horse. On grasping the muscles of that region they felt firmer than normal, and on passing the fingers down the leg towards the tendo-Achilles there was a thickened cord running in the course of the semitendinosus (biceps rotator tibialis) muscle. This cord was approximately the thickness of two fingers, and could be traced down nearly to where the tendo-Achilles commenced. There was no pain on pressure, and the cord was just subcutaneous. In the opinion of the groom it was simply a sprain caused by his master riding the horse up and down the South-downs.

The explanation of the curious action of the animal is not quite apparent; one would rather have felt inclined to attribute the sudden elevation of the leg to a spasm of the muscles in the front of the limb, and that the thickened cord would have had an inhibiting effect; as a matter of fact the horse does drag the toes of both feet in the first part of the stride. The semitendinosus muscle is placed at the posterior border of the hip and thigh, and arises by one division from the sacral spines and sacrosacral ligament, and by a second branch, which is shorter, from the tuber ischii. The tendon is flat, and is inserted into the tibial crest and fascia. Its posterior border blends with the fascia of the leg. Its action is "to extend the femur, flex and rotate the leg outwards, and tense the tibial fascia." If the action of extending the femur is in abeyance to some extent, we can now understand why the muscles in front of the leg gain an increased power.

As to the cause of the thickening, my own opinion is that it is due to some melanotic trouble, though after an extended search no tumours were found—if a small nodule in the skin of the same thigh about the size of a bean be excepted, and this may or may not be melanotic.

The contour of the semitendinosus is responsible for the "quarter mark" in horses, and in the above case the "quarter mark" was better defined on the affected side than on the other.

ABSTRACTS FROM FOREIGN JOURNALS.

LACTATION IN NON-PREGNANT ANIMALS.

E. Schrader has recorded the following cases of abnormal lactation.

A heifer, a year and a quarter old, which had never been covered, showed a development of the udder which was striking in comparison with that of her fellows in age. Milking was attempted and was successful; and the quantity of milk soon amounted to one litre (= about 1½ pint) daily. Schrader is unable to state the duration of lactation; and this observation is, therefore, a very incomplete one.

The next observation is much fuller, and concerns two well-nourished heifers of Dutch breed, in

the fourth year of their age. They had repeatedly been covered, but had never become pregnant. One day they showed such marked swelling of the udders that the cowkeeper attempted to milk them. Milk was obtained, but differed from normal milk by being of a yellowish colour. The milking was continued; and the quantity of milk rose to twelve litres daily for each animal. By this time the milk had become white. In both animals the udder had now attained the size and condition of that of a cow after her first calving; and they were milked regularly with the other cows. Chemical examination of the milk at an Agricultural College showed that its specific gravity was 1030 and its fat-content three per cent.

In one of the heifers the milk supply soon sunk to seven litres daily, and then continued to gradually diminish until the secretion finally disappeared. She was sold for slaughter. The other heifer continued to give twelve litres of milk daily for months, then became pregnant, and finally developed into an excellent milch cow.

Schrader adds that he has seen some cases of mares which had come into season after foaling, and had been covered but had not conceived, in which, about a year after foaling, the udder swelled and milk flowed away in streams from the openings of the milk ducts, as is often seen in mares a short time before or after foaling. Schrader has treated these cases with astringent lotions and a low diet; and the result has been a speedy cessation of the discharge and the return of the udder to its previous size.—(*Berliner Tier. Woch.*)

THE VALUE OF LABARRAQUE'S LIQUID AS AN INTESTINAL ANTISEPTIC AND IN SURGERY.

The use of Labarraque's liquid in medicine and surgery, though not now common, is of old standing.

So long ago as 1830, Labarraque's liquid was used internally in human typhoid fever and in equine colic and gangrenous pneumonia, and was also employed in gangrenous infections originating from setons.

Dr. Doyen, in a brochure published in 1904, praised Labarraque's liquid and its solutions as excellent antiseptics in the treatment of purulent ophthalmia and of pseudo-membranous affections, especially diphtheria. In purulent ophthalmia he used a 5% solution of the liquid, and in diphtheria a 20% solution.

Querreau, at a later date, stated his experience of Labarraque's liquid (*Recueil de Med. Vet.*, 1912). In numerous cases of inflammation of the small and large intestines in horses arising from over-feeding, he has used it daily in 1.2% solution as a copious rectal injection. In human rectitis accompanying dysenteric conditions, a solution of the same strength is said to be very effective when used in the form of copious clysters, or of small ones (10 grammes) repeated two or three times daily. Querreau has also used the same solution rectally in cases of infectious pneumonia.

Querreau recommends that the solution should be used freshly prepared, as it loses its antiseptic

properties when kept. It is an excellent intestinal disinfectant for cases of equine colic accompanied by the formation of gases and of muco-fibrinous exudate.

Querreau reports some clinical observations in which Labarraque's liquid showed a "wonderful" effect. They include cases of purulent arthritis of the fetlock joint, purulent synovitis of the carpal joint, and autoplasty of both knees.

On account of its solvent action upon fibrinous exudates of mucous and serous membranes, the use of baths of weak solutions of Labarraque's liquid is to be recommended in the treatment of infections of synovial membranes, such as gathered nails, and purulent arthritis or synovitis of the limbs.—(*Berliner Tier Woch.*)

[The formula for Labarraque's liquid is:—Chlorinated lime 20 grammes, crystallized carbonate of sodium 40 grammes, distilled water 200 c.c.].

W. R. C.

FLIES: A FACTOR IN, A PHASE OF, FILARIASIS IN THE HORSE.

By FRAS. EVELYN PLACE, B.V.Sc., M.R.C.V.S., Adelaide.

Professor H. N. Dickson, speaking before a recent meeting of the British Association, said, "Such serious inroads are being made on the resources of the whole earth that methods justifiable in Saxon times are not adequate now." Words most aptly suited to the attitude of total indifference, in spite of the monetary loss caused by worms and flies, both direct and indirect, due to their uninterrupted increase which affects the horse stock of South Australia to such a degree as to depreciate it to quite 10 per cent. of its value. In this thesis an attempt will be made to trace a direct connection between the existence of certain flies, notably *Stomoxys calcitrans*, *Musca domestica*, and *Musca vetustissima*, and the presence of certain filariae* in the stomach of the horse.

In 1898 the writer's investigations in India definitely fixed the blame for that form of cutaneous filariasis of the horse known as Bursattee on members of the fly family; and working on the hypothesis laid down by the Arabs that this particular form of Filariasis invariably involves the protective coverings of the eye, he was able to show that one of the chief points of infection was the glandular tissue of the eyelids, especially the *membrana nictitans*, which became the receptacle for embryonic helminths deposited by flies in their excrement as well as ejected in their saliva while feeding. Such nematodes are found in fairly regular ratio of 20 to 30 per cent. of specimens of *Musca domestica* examined in Bombay and *Stomoxys calcitrans* from the neighbourhood of that city. Their presence had been noted by observers as far back as 1861. These facts, together with the negative evidence afforded by the absence of Bursattee from fly free areas, formed the groundwork of further observations, in which both *Musca domestica* and *Stomoxys calcitrans* were found to be carriers of infective material, virulent for experimental horses. Eventually the points of ingress were narrowed down to open wounds and the eyelids. Since 1910 the frequency with which neoplastic growths on the eyelids of horses may be observed in South Australia, and the very common occurrence of worm nodules in the stomach, discoverable either post mortem or by

symptoms during life, have led to the observation of a causal connection between flies and these neoplasms.†

From time to time there has been observed a form of tetanic immobility of the *membrana nictitans* arising apparently from constant irritation by flies—fly nets being practically never used in South Australia—and this condition has never been noticed when flies are not troublesome, therefore, it is well to recall a few points in connection with the anatomy of the eyelids.

Upon the surface of the everted upper lid may be seen a number of minute openings, the excretory ducts of the lachrymal gland, while near the inner angle of both lids are the minute openings of the orifices of the lachrymal ducts, the *puncta lachrymalia*, while just behind the tarsal cartilages of the lid lie the *meibomian* glands. The small dark pigmented nodule in the inner angle, the *Caruncula lachrymalis*, is composed chiefly of connective tissues bearing on its surface well-developed mucous follicles. The *membrana nictitans* bears upon its front surface, covering its basis of flexible elastic cartilage, a coat of conjunctival tissue, embedded in the centre of which is a group of reddish yellow granules, the *Harderian* gland, secreting an oily material conveyed to the surface of the eyeball by a number of fairly large-sized ducts which perforate the cartilage. All these ducts are in close connection with the lachrymal gland under the supra orbital process of the frontal bone, and may easily be penetrated or perforated by the non-piercing proboscis of *Musca domestica* or the piercing organ of *Stomoxys calcitrans*.

The histology of the conjunctiva shows that the palpebral surface covering the *caruncula* and *membrana nictitans* consists of a stratified epithelium and a papillated layer of vascular sub-epithelial connective tissue containing small mucous glands. The ocular portion is thinner, non papillated, and less vascular, it is also more fully protected by the palpebral portions—reasons why the ocular portion is seldom the seat of the neoplasms.

Through the *puncta lachrymalia* the conjunctival epithelium is continuous with the lining of the lachrymal ducts. The *orbicularis palpebrarum* muscle closes the eye by bringing the free edges of the eyelids together, the range of movement of the upper being far greater than that of the lower. The tendon involved in this movement is the *Palpebral*, extending from the tarsal cartilage to the rim of the orbit. The *Levator palpebræ superioris* raises the upper lid, playing over the eyeball like a rope over the sheave of a pulley, by the aid of a thin flat tendon. The lower lid possesses no corresponding muscle, being depressed by its own weight and elasticity, which may be more than counterpoised by a group of flies.

The supra orbital, lachrymal, and orbital branches of the superior dental artery supply the blood. While the sensory nerves of the eyelids are derived from the supra orbital and palpebro-nasal branch of the ophthalmic division of the fifth and of the orbital and supra maxillary of the fifth, the motor nerve to the *orbicularis* is derived from the seventh, that of the *levator palpebræ* from the third. The retraction of the eyeball, assisted by movements of the lids, results in the *membrana nictitans* shooting over the eye. The raising of

† Worm nodules and infestations usually attributed to the presence of *Spiroptera megastoma* and *microstoma*, though the probability is that those reported as the latter are more frequently *Habronema muscæ*. The writer has in many instances found this to be so, but the exigencies of continual travel, amounting to over 20,000 miles annually prevented him from being able to apply the niceties of laboratory practice to the demonstration of the point. He must also plead this excuse in extenuation of the many failures to apply strict laboratory demonstration to other points which he puts forward, not as proven dogma, but as suggestive facts requiring elaboration.

* Generally where the term *filariæ* occurs the term *filariidæ* may be substituted.

upper lid is a material factor in the mechanism of its return. Continuous over-exertion of the muscles is bound to result in tetanic rigidity, for as the muscle becomes fatigued the contraction becomes slower and shorter, and fatigue is soon followed by relaxation, and when muscles have been greatly fatigued they remain partially shortened for some time. Muscular contraction is modified by temperature, toxins and fatigue—conditions provided in South Australia by summer temperatures of 40 to 50 C.: toxins are provided by flies or nematodes: fatigue follows the other conditions. Moreover, the eyeball must be further protected, and this is naturally carried out by further retraction, so that a very slightly moveable, almost stationary membrana nictitans forms a tempting lure to flies, the actual effects of whose presence upon it must be discussed later.

Now, following this irritation comes neoplastic growth, exhibiting the characters of an epitheliomatous papilloma in most cases, while in others it is apparently transitional between an epithelial carcinoma and a sarcoma,* a condition observed by Fibiger in wild rats and connected by him with the ingestion of nematodes derived from infected cockroaches (*Periplaneta* Amer. and Orient). He has described it as a disease of the stomach and oesophagus, characterised by an epithelial proliferation and inflammation leading to a papillomatous growth, the precursor of a malignant epithelioma. Examination of the primary lesions revealed the presence of a spiroptera.

This prodroma of symptoms might be written concerning the neoplasms on the horse's eyelids and in the stomach. Vesical carcinomata in man have been connected with the presence of *Bilharzia haematobia*,† and Haaland has demonstrated the infestation of the mammary glands of old mice with nematodes which set up interstitial changes, the forerunners of malignant growth. In the horse the neoplasms occur upon the Harderian gland and about the puncta lachrymalia and caruncula—all points readily capable of attack by the proboscis of *Stomoxys calcitrans* or capable of infection by other non-biting flies. The macroscopic appearance is that of a fungoid papilloma, often spoken of by observant laymen as "like proud flesh." Microscopically, they appear as already described, but large bodies apparently unconnected histologically with the tissue of the organ or growth appear with disconcerting frequency.‡ The histology of the membrana nictitans and lower eyelid easily account for the pathological appearances. They may even in some degree support the idea of transitional metamorphoses between carcinoma and sarcoma, but there is the implication of a foreign irritant, so absolutely necessary under modern theories of the origin of neoplasms, and there are these extraneous bodies apparently fulfilling the rôle. Granting the necessity of continued irritation, the presence of large numbers of flies supplies the cause and accounts for the physiological disabilities they induce. There are the *Simuliidae* responsible perhaps for the condition known to teamsters by the kakophonous, but expressive term "Bung eye" resulting from the infiltration of inflammatory fluid into the soft tissues of the eyelids as an effect of their persistent punctures. But their attentions, if painful, are tran-

sient, those of *Stomoxys calcitrans*, *Musca domestica*, and *vetustissima* are perpetual, due, no doubt, to the South Australian habit of bedding horses upon dung—a habit sprung from a shortage of manual labour, but now so firmly established throughout the State as to claim the legal sanction of custom. It is productive of heavy financial loss to its practitioners, the undisturbed layers of moist warm dung form an ideal breeding ground for the just named, and their congener *Muscina stabulans*.

Although for the moment the object of research is equine, the thought arises that the very high human mortality in South Australia from cancer of the stomach may not be altogether unconnected with these offspring of Beelzebub, while certainly the equally high incidence of purulent ophthalmia and trachoma is.

The next step is to recall some points connected with the bionomics of these flies, and precedence may be given to *Stomoxys calcitrans*, as its life history has been well worked out by various observers, Australian, European, and American, in connection with the transmission of both trypanosomes and filariae.

The eggs are laid in the dung of the host, notably the horse, but in South Australian bush faces of kangaroos, wallabies, and rabbits form a suitable site for incubation. Eggs are laid by nine-day old flies in some 20 depositions up to the number of 700 or more, and incubated in about 24 hours at about 30 C. The larval stages last under most favourable conditions from seven to eight days, the larvæ consuming the food available—the organic matter in the dung, where there is sufficient moisture, and are cannibalistic on their injured companions.

The pupa stage is five to six days, the males, smaller and darker, emerging earlier than the female imagines; both begin to bite six to eight hours after emergence, being essentially blood feeders. Females may live up to 75 days and males to 95. Sick animals are sought in preference to healthy ones. A curious co-partnership, amounting almost to a form of commensalism, is observed between *Stomoxys* and other non-piercing flies, such as *Musca domestica* or *vetustissima*, which group around the feeding *Stomoxys* and often hustle it and feed on the blood or fluids oozing from the punctures made by it, especially in the morning and evening.

In addition to the normal distribution of the fly, a cereal producing State like South Australia is liable to an abnormal fly population, because hay and straw stacks, which form a favourite breeding ground (especially near the bottom of old ones), exist in large numbers and attract flies, owing to the moisture, the more so when the season is rainy, as the flies are driven to shelter. Eggs are not laid until three or four meals of blood have been taken, when in bunches of 25 to 30 they are laid on rotting straw. Blood feeds are essential to fertility. Although most frequent in summer and autumn the flies may be found active in the depth of winter. The pupæ of both *Stomoxys* and *Musca domestica* are liable to a large extent to the attacks of small hymenoptera of the family *Pteromalidae*, one being *Spalangia musca*; while in dung and straw *Histerid* beetles destroy large numbers, and adults are devoured by spiders.

Muscina stabulans in the larval stage seems to be inimical to the larvæ of *Musca domestica*. It undergoes its developmental stages in about a month.

Musca domestica prefers horse dung to lay its eggs upon, although in the absence of this they may be deposited on decaying vegetable or animal matter. The eggs hatch in 24 hours or less. The larval stages last from five to seven days, and the pupal about the same, but the periods of development vary with climate and temperature, being shorter under warm and moist conditions, while the pupa may hibernate, as does also the adult in warm crevices, etc. A summer will produce 12 to 14 generations. A fly lays a large number of eggs,

* By transitional, is meant that the character of the cell proliferation varies in different parts of the neoplasm, being histologically nearer akin to a sarcoma than to an epithelioma.

† Such carcinomata being quoted only as tending to show that the presence of macro parasites does often precede the formation of neoplasms.

‡ Preparations of neoplasms from two recent cases were submitted without comment to a member of the Microscopical Society, S.A., who immediately recognised the bodies as nematode embryos, very closely resembling if not identical with *habronema muscae*.

100 or more, and lays four times, thus their rapid increase is accounted for.

Fannia canicularis, the small pale house fly, and *Musca vetustissima*, with white legs and body, develop very similarly. A small fly of the Hippelates family has been connected in Florida with a disease called "pink eye," or sore eye, in horses, and Nuttall notes their responsibility for trachoma in Egypt.

The number of quack horse dentists flourishing as itinerants in South Australia, and the number of imaginary dental cases they attend to—with no relief of the symptoms—caused an observation to be made, and it was found that their rounds were chiefly in fly zones, and that in practically every stable in those districts there were cases of profuse salivation, especially during the early stages of feeding, not due to defective teeth; also that after dental attention by the nomads no diminution of the salivation ensued. In addition the horses so affected were bad doers, of uncertain appetite, anxious to feed but rejecting their chaff fairly well chewed, but never having come in contact with the stomach juices.* The want of condition and the accompanying symptoms were generally put down by the owners to the presence of "blood worms," various sclerostomata: the salivation and rejection of food to defective molars. A proprietary worm powder containing Santonin and Tartar emetic is used freely, and also comparatively small doses of *Liquor arsenicalis*, and both lines of treatment alleviate the symptoms.

Therapeutically Bitartrate of antimony and Arsenic, in addition to being direct vermicides, have marked sedative action upon stomachs irritated by neoplastic growths, which produce the symptoms described.

Occasion has arisen to conduct autopsies on 150 horses of various stages and sexes destroyed for demonstration purposes, and practically 91 per cent. of these have shown nematode tumours in the stomach producing thickening of the mucous membrane of the lower oesophagus and gastric cardia. The post-mortems from fly-infested areas gave cent. per cent. of infections, and nearly 50 per cent. have had growth upon the membrana nictitans, or suffered from opacity of the cornea, and infestation by worms like, but different to, *spiroptera microstoma*, apparently due to the presence of filariae.† The symptoms simulate those occurring in intra-ocular filariasis as seen in India, arising from the presence of *filaria papillosa*; but in South Australia no adult worms have as yet been observed in the anterior chamber of the eye. In the remainder of cases, although no growths or opacity have been seen, there have been distinct signs of excessive lachrymation [which Weinberg attributes to the direct effect of worm toxins in the circulation acting locally], a condition existing in practically every horse in fly zones; so there is an evident condition of the fly-irritated eyes co-existent with filarial inhabited stomach growths very suggestive of cause and sequence.

As has been already mentioned, J. H. Carter, in

* That is, the food is swallowed and only reaches the pouched lower portion of the oesophagus, producing the profuse salivation, similar to that noticed in the human being antecedent to the vomiting of seasickness, and markedly noticeable in vomiting animals like the dog and cat in severe nematode infestation, such as that of ascarides. It is considered by Wienberg to be caused in those animals and children by helmintho-toxin similar to tænia toxin.

This rejection of food by the horse is interesting. It is probable from clinical symptoms that the parasitic irritation of the stomach causes spasmodic constriction of the cardia and so both prevents food from entering and facilitates its return up the oesophagus: this is not an act of vomiting violently closing the velum palati, but a semi-voluntary rejection through the mouth.

† Or more correctly nematode.

Bombay, in 1861, discovered a parasite in the house fly—*Habronema muscae*—the development of which he was unacquainted with, but sagely remarked that "As many entozoa are nursed in one animal and lay their eggs in another, it is not improbable that the cycle of their existence may be completed in a crane (*Ardea modesta*) which appears to live chiefly on the common house fly." After a mention by Diesing in 1861, Leidy, in 1874, notes the presence of *Habronema muscae* in 20 per cent. of the house flies examined in Philadelphia.

Independently, in the same year, Ercolani refers to the presence of a nematode living in the proboscis of flies. In 1875, Linstow noted and described nematode embryos and larvæ in the head of *Stomoxys calcitrans*, in the muscles of the proboscis and sheath. He names the worm *Filaria stomoxeos*, believing it to be the larva of *Filaria papillosa*. It was probably *Habronema muscae*. In 1886, Generali notes these parasites in 12.6 of the flies examined, one or two per fly, measuring 1-1.5 mm. by 50, which is small. He notes that they live in salt solution 1:1000 for four days, and survive desiccation. In 1912, Johnson finds *Habronema muscae* in *Musca domestica* and *Stomoxys calcitrans* in Sydney, and Ransom finds 20 to 30 per cent. of flies examined infested, and suggests that a rough idea of the place of origin of flies may be based on the presence of *Habronema muscae*, as surely indicating it to be horse dung. One or two per fly is common, but eight rare, and in pupæ 3 to 5. The head or abdomen are equally infested, and occasionally the thorax, but the occurrence of the parasites in several situations is exceptional. Occasionally in newly emerged flies encysted larvæ are found in the head or abdomen.

In pupæ the abdomen is the common seat of infestation, and as many as 50 per cent. are found to be encysted. Experiments confirm Carter's observation that the larvæ can be kept alive artificially for four days, and they have been noticed to survive the death of the fly for two days. The pupæ of flies are frequently found in the contents of a horse's stomach, and, even if horses do not voluntarily swallow dead flies, they must commonly ingest the worm larvæ surviving in the moisture of the chaff. The larvæ must also find a ready means of escape from the fly's proboscis, which must often be ruptured by the movement of the membrana nictitans. The worm eggs, or living embryos, having passed through half a dozen stages of larval existence eventually appear in the submucosa of the horse's stomach.

Spiroptera microstoma and *Habronema microstoma* are cogenetic, and no doubt often confused, their adult measurements being similar.†

† Carter spoke of the nematode embryos found in the heads of *Musca domestica* as "*Filaria muscae*" while Linstow named those he had noted in *Stomoxys calcitrans* "*Filaria stomoxeos*," and following this nomenclature the embryonic nematodes in the head of *Stomoxys*, have been called filariæ, the term to include *habronemata* or *spiroptera*, though probably it would have been better to term them filaroid.

Ransom considers *Spiroptera microstoma* to have a similar life history to *Habronema muscae* and Linstow's *Filaria stomoxeos*, and the exigencies of a busy and nomadic existence have prevented the writer from examining as many subjects as he would have wished in order to differentiate the species of filaroid nematodes found in the neoplasms of the horse's eyelids and flies connected therewith, but the eggs noted are chiefly thin shelled, 40-50 by 10-12 microns, the embryos, 80-100 by 5-7 microns, the immature worms 2.2 mm. by 70 microns, measurements which would apply indifferently to *Spiroptera microstoma* or *Habronema muscae*.

Specimens of *Habronema muscae* female measured 13-22 mm., male 8-14 mm. by 250-300 microns, with a maximum width at the posterior end.

Spiroptera vel *Habronema microstoma* female measured 15-25 mm. by 330-500 microns.

Although by no means denying the fact of infestation occurring through flies or their pupæ being swallowed by horses, the presence of the worms in the submucosa instead of on the surface or in the follicles led to the examination of the growths upon the membrana nictitans, and in ten cases examined larvæ or debris of larvæ could be demonstrated and identified as mentioned above, the identity of the large foreign bodies previously alluded to being thus established. Opportunity occurred in two cases to examine apparently normal membrana nictitantes in which larval habronemata were found in the ducts of the Harderian gland.

It is also worthy of note that the growths or their antecedent filariasis occur on the Harderian gland or lower edge of the caruncula lachrymalis, and by their weight mechanically depress the lower eyelid, and may extend to the lower sclerotic, but in no instance has the upper eyelid been found to be affected, from which it may be inferred that gravity assisted by tears can flush out intruders which by chance might be upon the upper lid, but in the lower their weight and activity assure them safe and pleasant resort in the lachrymal fluid and adjacent tissue.

In two instances of very severe attacks of *Filaria palpebralis* vel lachrymalis the Harderian gland and punctum lachrymale contained larvæ similar to *Habronema muscae*. In one case the growth was as large as a goose's egg. In two instances where the growth on the membrana nictitans had recurred on the edge a year after removal, it was again removed and ice poultices applied continuously for 48 hours. Up to date the growths have not recurred, after a further 18 months. Remains of larvæ were present in each.

In two instances no larvæ were found in the growths on the membrana nictitans, but specimens of *filaria irritans* were found in granulations of sores produced by girth galls, which a year later had not recurred after treatment with iodised phenol, neither did the growths on the eye. In six cases exhibiting during life acute symptoms of stomach irritation, extensive congestion and thickening of the lower end of the oesophagus and cardiac opening of the stomach existed, and was caused apparently by numerous immature worms, *Habronema* vel *Spiroptera microstoma*.

The structure in the growth in the stomach occupied by the adult *Habronema* or *Spiroptera* indicates that it results from a proliferation of the submucous tissues, and in many cases the surface presented to the interior of the stomach is normal in appearance and function, as, says Fiebiger, "The mucous membrane is not altered but only thickened," and only in those cases where injury has occurred from indigestible cellulose or from other parasites, such as the larvæ of *gastrophilus equi*, and been succeeded by suppurative processes does there

appear to be direct communication with the interior of the organ, indicating that the worms have reached their residence either by the blood vessels or by a rapid passage through the mucosa. In support of the former view their occurs annually in South Australia in the spring months an equine epizootic, very wide-spread, but most severe in regions where *Stomoxys calcitrans* and *Musca domestica* are most common (and following a seasonal course from north to south corresponding with the gradually later fly development) exhibiting fever, lassitude, partial paresis, œdema of the extremities and looser subcutaneous regions. Post-mortem, the lungs and liver contain numerous small caseous or calcified nodules containing embryos 150—200 microns long,* bearing a strong resemblance to *Habronema muscae*. The congested condition of the spleen, in the contents of which embryos may also be found, suggests that in this organ many meet with destruction, but it is not a far cry from that organ via the neighbouring blood vessels to the cardiac submucosa of the stomach, and it is worthy of note that within a few weeks of these epizootics farmers begin to complain of the symptoms of stomach troubles already described, while the symptoms both ante and post mortem are those of helminthiasis, although generally called influenza—a name which, like charity, covers a multitude of evils, and it appears probable that in the spring, when large numbers of *Stomoxys calcitrans* and other flies are emerging and seeking blood, that the sick animals whose blood is charged with both ova and embryos of *Spiroptera* vel *Habronema microstoma* form reservoirs from which *Stomoxys calcitrans* infests fresh hosts at exposed spots like the membrana nictitans, the mucosa of the palpebræ and lips, while other flies take advantage of moist warm membranes already weakened and rendered non-resistant by the attacks of *Stomoxys calcitrans*; or in their turn, imbibing embryos and larvæ with the blood and juices transmit them to their own larvæ and succeeding imagines, to be again placed in conjunction with such eligible sites for development as the ducts of the Harderian and lachrymal glands, where undoubtedly the proliferation of tissue is an attempt to destroy the invaders, which, however, generally manage to escape into the circulation without causing more disturbance than a profuse flow of tears.

With regard to infection by ingestion, the frequent presence of fly pupæ in the contents of the horse's stomach makes it necessary to consider it as a possible means of infection, though dead flies have not been noted. On the other hand there is no doubt that worm larvæ are voided in vomit by flies in large numbers upon chaff, and that the mechanical attrition of particles of chaff in the manger or elsewhere would assist in damaging the proboscis and tissues adjacent to it, so that infected chaff may reasonably be considered a source of danger, as, even if desiccated, the larvæ have been shown to be capable of resuscitation in a fluid like saliva. In such cases the lower part of the oesophagus is probably the place of incubation, or rather the brooder, the worms then migrating by means of the adjacent vessels, especially those whose convolutions on the external surface of the stomach render them a safe and convenient pathway on account of the relative slowness of the blood streams circulating therein, similarly to the way others have passed from the comparative stasis of the splenic lacunæ into the circulatory stream.

The fact that continuous application of ice and silver salts, such as nitrate, appear to destroy the irritant

The heads appear to be very similar but in *Habronema muscae*, the pharynx is small and slender.

Habronema muscae has four pairs of pre anal papillæ and two post anal, while the left spicule is long and slender the right being shorter and thicker, the vulva is in the anterior third and front, and small.

Habronema microstoma have four pairs pre anal and four pairs post anal papillæ, while the left spicule is shorter and thicker than the right, and the vulva large.

But as to mere measurements of length the two species are indistinguishable.

Taking as typical of the filariidæ the six oral papules and two lips, the one or two posterior spicules and the four pairs of pre anal papillæ, with the vulva in the anterior third of the body, the *Spiroptera* would be recognised by their lateral wing-like expansions at their caudal extremity and their two spicules.

In using the word *Filariasis* the writer has followed Carter and the old school, such as Linstow, the term being used in a wide sense.

* Declared by Weinberg and Julien to be dissimilar to the sclerostomata with which they are frequently associated. Recent observation has enabled the writer to note the presence of such embryonic worms in the blood of the splenic artery and its branches.

nematodes, is significant of the desirability of limiting their activities, and probably of bringing about the end of their vitality; but local attack, either in the neighbourhood of the eye or in the stomach, is of small value as compared with the control of the distributing agents, the flies, and this in South Australia at least has hitherto been entirely neglected. The well-known fact that frequent disturbances of the dung in which flies are breeding gives the keynote of preventive treatment, namely, to remove all stable litter at least once a week and spread it thinly on the land. Unfortunately, as has already been hinted, this very simple method is impracticable in South Australia on account of the shortage of labour, and the latter part of it would not appeal to the agriculturist.

The suggestion to periodically spray the dung with poisonous compounds, such as arsenical sheep dip, or spray, is fraught with too much danger to poultry and animals about the yard to be practicable, and expense precludes the use of substances like cresol or chlorinated lime, although if a trial balance were struck the saving in horse efficiency and even life would more than repay the outlay. Lime mixed with the dung would be both cheap and effective in many areas, but neither in others, to say nothing of the agriculturist's objection to treating fresh horse dung with it. Thus it behoves one to note the vital conditions necessary for the welfare of the flies and act accordingly. A reinforced concrete tank erected near the stable, and fitted so as to be fly-proof, large enough to hold dung till a convenient time for its removal to the paddock, will soon pay for itself if the dung is put into it, preferably daily, or at least once a week. As larvæ cannot develop without moisture, therefore, a dry stable floor will retard their increase.

Bright light prevents their development practically altogether, so the dung if thrown out should be scattered thinly. Poultry and pigs will both do this work without payment, and devour many larvæ, while beetles, spiders, and larval parasites will also help. Another means of control is indicated in dry haystacks, either under artificial cover, such as Dutch barns, or well built and thatched—conditions fast disappearing in South Australia. Rotting heaps of short chaff or straw and dung in out of the way places should be destroyed. Flies do not like dark stables, but the many undesirable concomitants of diurnal darkness make one hesitate to recommend this, and screening ventilating openings with wire gauze, and hanging nets over the doorways to brush off flies from animals as they enter is preferable. The traps of wire gauze set in convenient openings will materially reduce the fly population at the rate of many quarts at a time. While in the paddock or on the road, fly nets for the face should be in general use, supplemented in badly infested areas by body nets, or similar contrivances. Bunches of gum leaves tied with cotton, which may be easily broken, to rafters of the stables, will be much appreciated by the flies in the evening, and boys armed with paper bags large enough to deftly slip over the bunch and close over it quickly will soon visibly reduce the number of flies by burning bag, bunch, and buzzing brutes.

APPENDIX B.—CASES.

1. Grey mare, 5 years, Lower North.—Papillomatous growth removed from membrana nictitans of near eye. Reported six months later to be all right. Nature of growth: Papillomatous epithelioma, containing debris of Spiropteris larvæ. Nine months' growth reported to be larger than ever, and again removed. More like fibro sarcoma. No larvæ.

2. Brown gelding, nine years, North.—Papillar epithelioma removed from membrana nictitans of off eye. Containing debris of larvæ. Two years later reported all right.

3. Bay gelding, aged, North.—Growth in membrana nictitans of near eye removed with apparently healthy tissue in the ducts, of which debris of larvæ were found. Nine months later growth reported to be larger and again removed; appeared to be epithelioma without debris of larvæ. Three months later again reported to be growing. Sold, and lost sight of.

4. Brown mare, aged, Lower North.—Opaque cornea off eye. Small epithelioma removed from membrana nictitans of near eye, containing debris of larvæ. No recurrence two years later. Off eye less opaque.

5. Bay stallion, six years, Lower North.—Papillomatous growth near side membrana nictitans, and similar growth off side lower eyelid and membrana nictitans. Growths excised and a part of normal off membrana nictitans found to contain larval nematodes in ducts.

6. Grey gelding, aged, Eyre's Peninsula.—Small papillomatous growth removed from near side membrana nictitans. Copious lachrymation off eye. Part of membrana nictitans removed, in ducts of which nematode larvæ and debris.

7. Chestnut gelding, aged, Eyre's Peninsula.—Enormous fibro-sarcoma removed from off eyelid and membrana nictitans. Small papillomatous growth removed from near lower eyelid, debris of larvæ in both. Large fibro-sarcoma removed from inside off cheek, possibly metastatic from primary lesion in eye. Small epithelioma from upper surface of tongue. Reported dead three months later without recurrence of growths.

8. Bay gelding, 7 years, Eyre's Peninsula.—Very large sarcomatous growths removed from both membrana nictitantes, debris of larvæ in ducts in both.

9. Chestnut gelding, Yorke's Peninsula.—Near membrana nictitans partially removed on account of protrusion over eyeball. Larvæ of nematodes in ducts. Reported well three months later.

10. B. mare, 7 years, Yorke's peninsula.—Off membrana nictitans partially removed showed epithelial proliferation around ducts and larval debris. Four months later reported well.

APPENDIX C.—AUTOPSIES.

a. Bay mare, aged, Yorke's Peninsula.—Symptoms of stomach irritation for two years. Pouching and thickening of the lower end of the œsophagus and spiropteris nodules numerous in the stomach, large numbers of Spiropteris nematodes in both situations.

b. Chestnut yearling colt, Lower North.—Emaciated. Profuse salivation. Œsophagus nearly occluded. Cardia of stomach thickened and congested, and line of small spiropteris nodules. Œsophagus and gastric cardia alive with immature nematodes.

c. Bay mare, 8 years, Lower North.—Profuse salivation, emaciation, teeth normal. Pouching of lower œsophagus, thickening of gastric cardia, both alive with nematodes. Spiropteris tumors varying in size from an orange to that of a pea, and some ulceration and suppuration.

d. Bay stallion, 6 years, North.—Attacked with gastric colic, salivation noted four days previous to the attack. Death from ruptured stomach. Pouching of lower œsophagus, inflamed gastric cardia. Numerous nematodes, four spiropteris tumors, one suppurating and on starting point of rupture.

e. Bay gelding, aged, Eyre's Peninsula.—Large papillomatous growth near membrana nictitans, showing debris of nematode larvæ—Salivation, emaciation, teeth normal. Pouching of lower œsophagus and thickening of gastric cardia, both places thickly infested with nematodes, suppurating spiropteris tumors.

f. Brown gelding, aged, Eyre's Peninsula.—Off membrana nictitans large papillomatous growth with nema-

tode larvæ debris. Pouching of œsophagus, thickening of gastric cardia, numerous immature worms and spirroteric tumors suppurating.

APPENDIX E.—BIBLIOGRAPHY.

- M'Fadyean.—Anatomy of the Horse.
Smith.—Veterinary Physiology.
Bishop, F. C.—American Journal of Economic Entomology, Stomoxys Calcitrans.
Ransom, B. H.—Life History of Habronema Muscæ.
Johnston, T. H.—Notes on some Entozoa.
Howard, L. O.—House Flies.
Herms, W. B.—House Fly in relation to Public Health.
Bureau of Entomology, St. Petersburg.—Muscina Stabulans and its relation with Musca Domestica.
Phillipine Journal of Science.—Bionomics of Stomoxys Calcitrans.
British Medical Journal 22, Feb. 1913.—Nematodes in the production of Cancer.
Goldie, E. A.—Die sanitärisch—pathologische Bedeutung der Insecten.
Fiebig, J.—Die Tierischen Parasiten der Hause und Nutztiere.

REVIEW.

VETERINARY POSOLOGY. By GEORGE A. BANHAM, F.R.C.V.S., and W. JACKSON YOUNG, F.R.C.V.S., D.V.S.M. (Vict.) Fourth Edition. Pp. xvj + 272. Price 3/6 net. Bailliere, Tindall, & Cox, 8 Henrietta Street, Covent Garden, London. 1915.

Few veterinary manuals are so widely used by students and practitioners alike as this one has been ever since its first publication twenty-eight years ago. Each of three previous editions has been reprinted; and the fourth edition is now before us. In preparing it, the author has had the assistance of a collaborator; and the two may be congratulated upon having enhanced the value of the work.

The book is so universally known that a lengthy review of it is not necessary. The posological table and pharmaceutical formulæ have of course been revised in accordance with the *British Pharmacopœia* of 1914; and a good deal of additional information, chiefly in tabular form, has been inserted. The expansion the work has undergone since 1887 is illustrated by the fact that the first edition contained barely a dozen tables—including the posological one—while in the present issue there are between forty and fifty. In addition to the tables, there are directions for using mallein and tuberculin, including the ophthalmic tests with each, accounts of the vaccination methods for swine fever and swine erysipelas, and some minor matters.

Perhaps the tables of comparative anatomical weights, capacities, and measurements, of digestive co-efficients, of methods of ascertaining nitrogenous, fatty, and nutritive ratios of food-stuffs, and of rations for draught-horses, may be mentioned among those likely to be of especial service. But, without going into detail, we may say at once that the present edition is certain to be even more useful to the profession than its predecessors have been. It is no exaggeration to call it the best condensed compilation of information for ready reference we have at our disposal. Many of the very varied subjects with which it deals are of great importance in everyday practice; and perhaps the book is really much more useful to many clinicians than most more ambitious ones. It met a distinct need of both students and practitioners when it first appeared; and the position it then gained it continues to fill more satisfactorily with each succeeding edition.—W. R. C.

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Sept. 4.

REGULAR FORCES. ARMY VETERINARY CORPS.

Lieuts. to be Captains :—

W. St. J. F. McCartney, and to remain seconded ;
E. C. Doyle, R. H. C. Higgins, E. McK. Nicholl,
R. C. G. Thwaytes. Dated Sept. 3.

Temp. Lieut. W. B. D'Emarteau relinquishes his commission. Dated Sept. 5.

Appointment of Lieut. R. J. Vickers, from Canadian Vety. Corps, to a temp. Lieutenancy, notified in *Gazette* of Aug. 20, is cancelled.

Lieuts. (on probn.) confirmed in rank :—

R. M. Bamford, S. O'Donnell, A. A. Pryer.

Sept. 6.

Lieuts. (on probn.) confirmed in rank :—

R. Moore, G. C. Lancaster, J. G. T. Edwards, F. C. Minett, R. Daubney, M. G. O'Connell, P. T. Saunders, D. Marshall, H. S. Cockburn, E. H. Wyly, L. A. Auchterlonie, C. J. C. Ryan, H. J. Lowe, R. Wooff, H. L. Torrance, J. Fox, S. C. Rowbotham, D. C. Greene, H. McC. Johnston, J. A. Ward, S. Hunter, J. J. Hegarty, J. J. Dunlop, W. McG. Mitchell, M. F. O'Sullivan, T. T. Taylor, D. Blythe, A. V. Nicholas, W. H. Wortley, G. A. Roberts, S. H. L. Woods, C. Tracey, W. E. Footner, R. J. Forrest, T. M. Mitchell, W. J. Bambridge, P. D. Huston, P. S. Sparling, B. J. W. Nicholas, T. W. W. Wright, J. O'Carroll, R. T. Smith, H. B. Williams.

Sept. 7.

To be temp. Lieut. :—J. Nagle. Dated July 20.

To be temp. Hon. Lieut. :—G. C. R. Thorp. Dated Aug. 23.

Sept. 8.

Major E. E. Martin to be temp. Lt.-Col. while holding appt. of asst. Dir. of Vety. Services. Dated Feb. 6.
Lt. Col. H. W. Pitchford Natal Perm. Staff Defence Force, to be temp. Lt.-Col. Dated July 16.

To be temp. Majors :—

Vet. Capt. B. B. C. Rees-Mogg, 1st Life Gds. Dated Aug. 7.

Capt. W. G. Barnes (T.F.). Dated Aug. 16.

To be temp. Lieuts. :—

F. J. Pringle. Dated Aug. 24.

W. J. S. Foley. Dated Aug. 26.

Sept. 4.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Capt. R. L. Green to be temp. Major. Dated Aug. 18.

Sept. 8.

B. W. Blomfield to be Lieut. Dated Sept. 9.

The following casualty in the Mediterranean Expeditionary Force is reported :—

DIED—Pte. R. G. Murphy, 147, N. Z. Vety. Corps.

Diseased Animals prohibited in Gloucester Market.

The seal of the Gloucester City Council has been affixed to a new bye-law prohibiting persons bringing into Gloucester cattle market any animal which is diseased or unhealthy, or, being an animal whose flesh used for the food of man, is in a state rendering it unfit for human consumption. Offenders against this bye-law will be liable to a penalty of £5.

Alderman Braine, who brought the matter up, observed that those who knew the bye-law and who were

acquainted with the market considered it one of the best acts the committee have adopted. Previously the Council had no control over diseased cattle that came into the market, and this would prevent any unfit cows standing for sale in the yards.

Alderman Langley-Smith, who seconded, said he knew of a case where, through the activity of the Market Inspectors, animals with disease were taken possession of and destroyed.

The motion was carried.

SEAHAM HARBOUR STUD SALE.

A sale by public auction of the valuable Clydesdales, Hackneys, and Shetland ponies, the property of the late Mr. Robert Brydon, has been provisionally fixed for Thursday, 7th October.

OBITUARY.

SIDNEY STURGESS, M.R.C.V.S., J.P., Ashby-de-la-Zouch.
Graduated, Lond.: April, 1878.

Mr. Sturgess died on Thursday, Sept. 2nd, aged 57. He was late Chairman of the Ashby Urban District Council.

DUTIES OF THE A.V.C.

Dear Sir,—In reply to the enquiries of "Curiosity" in your issue of last week, I am pleased to be able to inform him that the question, "Are you a good horseman?" refers to equestrian ability, and is intended to elicit information that will serve to guide the Authorities as to the alternative suitability of the candidate:—For duty with a Division in the Field, where ability to ride fairly well is essential: or

For duty, in Veterinary Hospitals or Remount Depots, which may be carried out dismounted.

With reference to his other query, the Authorities ask primarily for professional ability. Any purely military duties can be taught him after he joins, and only in exceptional cases will this be necessary, as the command of units where such knowledge is essential (*e.g.* Mobile Veterinary Sections and Veterinary Hospitals), is given to regular officers or to officers with sufficient previous military experience to qualify them for these appointments.

I hope the information may induce "Curiosity" to come forward, and bring some of the "many members" he mentions in his letter. There are 50 vacancies waiting for commissioned veterinary officers.—Yours truly,

W. H. B.

VETERINARY ETIQUETTE.

A rather severe case of lameness presenting unusual features in a horse, the property of a large dairy company having a branch in my district, decided me to express a wish to meet a consultant. The main London branch of the firm was communicated with to this effect, and replied that they would send their V.S. to meet me. After the lapse of a few days, hearing no more, I again visited my case, when, much to my surprise, I heard that the V.S. had already twice visited and treated the horse. Subsequently the stableman brought me a letter from his firm asking him to thank me for my attention to the horse, and stating that their V.S. had now taken the case in hand. The loss of the case is insignificant. I feel no grievance over this, being a sufficiently busy man; but it is the lack of professional courtesy of a fellow practitioner in neither communicating with or meeting me in consultation. The stableman, without any comment from me, remarked the conduct as unusual. Even stablemen have a higher sense of etiquette.

Harrow.

GEORGE YATES, M.R.C.V.S.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended September 4	6	6					13	20		62	277
Corresponding week in											
1914 ...	7	10	6	11	2	4	1	1	2	61	329
1913 ...	6	6			2	3	28	40	3	44	454
1912 ...	10	11	5	59	3	4	17	27	1	29	339
Total for 36 weeks, 1915 ...	424	484			36	65	‡593	‡1280	161	3055	13619
Corresponding period in											
1914 ...	525	574	20	102	75	223	1522	2634	155	2882	29268
1913 ...	387	426			117	294	1940	3895	132	1760	23566
1912 ...	576	654	75	501	126	236	2365	5121	174	2247	29240

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked:

Board of Agriculture and Fisheries, September 7, 1915.

‡ Figures for twenty-three weeks only.

IRELAND. Week ended Sept. 4		...	...	...	...	...	...	Outbreaks 1	6	6	5	
Corresponding Week in	{	1914 ...	...	...	...	...	...	2	2	1	6	
		1913 ...	...	...	...	...	...	3	2	1	14	
		1912 ...	...	...	2	11	...	...	1	1	2	11
		1912 ...	...	...	2	11	...	...	1	1	2	11
Total for 36 weeks, 1915		...	1	1	...	...	1	3	54	296	191	1005
Corresponding period in	{	1914 ...	1	1	76	957	...	...	64	392	159	825
		1913 ...	...	...	...	...	...	...	101	376	118	689
		1912 ...	3	3	26	247	...	...	53	265	179	1493
		1912 ...	3	3	26	247	...	...	53	265	179	1493

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Sept. 6, 1915
NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1419.

SEPTEMBER 18, 1915.

VOL. XXVIII.

THE DEPARTMENTAL COMMITTEE OF THE BOARD OF AGRICULTURE ON SWINE FEVER—FINAL REPORT.

The final report of this important Committee is now before us, and is distinctly interesting. Its conclusions cannot be called encouraging, but they are far from being hopeless; and they clearly foreshadow important changes in the Board's policy against swine fever.

The Committee's actual report is not voluminous—it fills less than three pages. Following it are minutes of the evidence given by two of the Board's general inspectors, Messrs. W. S. Douglas and A. Hamilton Pryce, who have been in charge respectively of the Scotch and Welsh "special procedure areas." Then comes a very long and detailed report of experiments, amounting to 54 pages, from Sir Stewart Stockman, who was commissioned by the Committee to investigate a number of questions. One of these—the possibility of utilising the diagnostic tests employed in connection with other diseases for the discovery of non-typical cases of swine fever—is not yet reported upon. The others, which may be summarised as concerning the methods of infection, the duration of infectivity, the possibility of "carriers" in connection with swine fever, the duration of immunity after an attack of the disease, and the utility of artificial methods of immunisation, are all dealt with by Sir Stewart; and his results form the chief basis of the Committee's report. This, with some tables showing the incidence of the disease, completes the volume.

The "special procedure" of vigorous slaughtering out of in-contacts, which has been adopted in certain areas for 3½ years, has not been a success. Enforced in areas where swine fever had previously been brought to a low ebb, it seems to have kept down the number of outbreaks at a time when disease was increasing greatly in other parts of Great Britain. But its good effects were largely nullified by the re-importation of disease from other counties; and the Committee conclude that it would not be likely to eradicate the disease in the "special procedure areas" unless all pigs from other areas could be excluded. The "special procedure," therefore, has been abandoned for the present. We may add that its failure well illustrates the economic difficulties of eradicating swine fever by stamping out methods. The financial loss would be appalling, if success were to be assured.

Sir Stewart Stockman's experiments have enabled the Committee to form definite conclusions upon most of the questions concerning infection and infectivity. They conclude as follows. The manure

of pigs suffering from swine fever is infective. A period of fourteen days may be regarded as sufficient to bring about the disinfection of infective manure by natural processes. It should be noted that one important member of the Committee, Prof. Penberthy, only signs the report with the reservation that he is unable to subscribe to this finding. He does not consider that the experiments upon which it is based are conclusive, and thinks it "highly desirable that further experiment on the point should be undertaken and its result well considered before any period is accepted as the basis of administrative measures."

Rats are not, as has been suggested, pathological carriers of swine fever; and all the available evidence suggests that swine fever is not disseminated by external parasites. Persons, vehicles, and animals after contact with infected pigs or premises may carry infective material mechanically within the area of their movements, subject to the time limit indicated above; but the Committee conclude on the evidence that all wide dissemination of disease is due to the movement of infective pigs.

A pig may become infective three days after itself contracting infection and before exhibiting clinical symptoms of disease, and a pig which has contracted the disease may continue to be infective for a variable period, the extent of which is not yet fully ascertained, but which is often of considerable duration. Finally "there would appear to be" cases in which healthy pigs which have not visibly been affected by swine fever and show no post-mortem evidence of having been affected, are infective and remain so for a considerable time. The Committee are not very definite on this question of "carriers." Its investigation is very difficult; and the Committee's conclusion upon it is merely that "the possibility that the carrier pig exists cannot be lost sight of." Sir Stewart Stockman, in his individual report, speaks more strongly. He admits that the existence of carriers is not yet definitely established, but considers that circumstantial and experimental evidence taken together are "strongly in favour" of the view that they do exist.

Sir Stewart's experiments upon protective serum have yielded distinctly encouraging results. It appears that serum is highly effective in saving the lives of pigs which are exposed to infection immediately after serum is injected, if they are free from infection at the time of treatment. But it has no curative effect; its protective results are so far disappointing in the case of young sucking pigs; and the immunity it confers is brief. A prolonged immunity, however, can be obtained by allowing serum-treated pigs to come into contact with infection (natural vaccination) or by feeding or

inoculating them with virus (artificial vaccination). Serum and vaccination methods against swine fever are not perfect—the latter cannot at present be called free from risk—but their improvement is still being worked upon, and Sir Stewart's results are more hopeful than some of us expected.

The Committee enunciate a series of "general conclusions," of which two consecutive sentences deserve quotation. "The extirpation of the disease is practicable only by such drastic methods of slaughter as would involve a prohibitive outlay, and by such severe restrictions on movement as would be fatal to the industry of pig-keeping. Present circumstances, therefore, do not encourage the view that the extirpation of swine fever can be speedily accomplished or that such an objective should continue to be made the governing idea of administrative policy."

The Committee suggest that "new preventive methods may bring about a condition of affairs more favourable to the eradication of the disease."

Then they pass to a series of revolutionary recommendations.

In brief, the recommendations are as follows. The attempt to extirpate the disease by general slaughter should be abandoned for the present; and the immediate object of future policy should be to reduce its mortality and control its spread. To reduce mortality, the use of protective serum without avoidable delay in infected herds should be encouraged by every possible means, especially by facilitating the supply of serum. The production of immune herds by administering serum and virus simultaneously should be undertaken at the desire of owners, on selected premises, and under careful supervision and restrictions. Infected premises should be isolated; but the introduction to them of pigs to be treated immediately with serum should be permitted. The possibility of relaxing existing general restrictions on movement as the result of new measures should be carefully considered in the light of further experience. The lapse of a short period of time may be relied upon for disinfection of premises, and should be preferred to chemical disinfection for large quantities of manure, and for premises not readily capable of being disinfected artificially. After these recommendations, the Committee remark that they are "strongly impressed by the possibility" of artificial vaccination as a means of combating swine fever, point out the advantages which a reliable diagnostic test might yield, and recommend the continuance of the search for one; and this brings the report to an end.

Probably its publication will mark an epoch in the history of swine fever in this country. The Committee have endorsed that old dictum of Sir George Brown, "Nothing short of cattle plague regulations will stamp out swine fever," have decided such regulations to be economically impossible, and have been able for the first time to advise the substitution of a preventive treatment for stamping-out measures. We believe the two first decisions to be justified; the third can only be tested by experience.

TREATMENT OF NEMATODE DISEASES.

Perhaps Prof. Craig will not mind a few further remarks on this enormous subject. It is principally where he deals with tropical nematodes that I have any comment to make.

Thymol. He says: "Thymol . . . might be useful, judging from results obtained in ankylostomiasis in the human subject."

In Vol. vi. of the *Journal of Tropical Veterinary Science* is an account of some experiments with thymol in pariah dogs in Lahore, on the same lines as Manson recommends for human beings. It was found that one set of doses, at least, had not any effect either in destroying or driving out ankylostomes, although tapeworms and ascaridæ were got rid of.

It is curious that many Indian pariahs harbour ankylostomes, often in large numbers, and do not seem much the worse.

Filaria in the circulation. In the paragraph headed "Nematodes of the Circulatory System," I feel that a wrong impression is conveyed as to filarial embryos causing "disease," when present in the general circulation. It is somewhat doubtful whether the *F. sanguinis equi* causes much harm to its host. I have seen many cases in India, and their discovery has in most cases been accidental. One pony had from four to six embryos in nearly every low-power field of the microscope, but showed no ill-effects. I did have one animal brought to me whose owner complained that he could never get the pony perfectly fit, and in his blood an occasional embryo could be found after a prolonged search, and only at intervals of a few days; but I finally concluded that other causes probably accounted for the want of fitness.

Argyle, in Vol. v, No. 1, *Jour. of Trop. Vet. Science*, describes horses affected with *F. sanguinis equi* and gives symptoms. He examined likely animals showing the symptoms described by Lingard in his pamphlet on "Filarial Embryos," and says: "In comparison with the number of animals examined the results are very small" and "the debility could generally be traced to other causes."

I think there is no doubt that horses, like human beings, in the tropics, can harbour filarial embryos in the general circulation, and yet appear perfectly healthy, and the same remark applies to camels (see Leese's article in Vol. vi, No. iv. *Jour. Trop. Vet. Science*). Prof. Craig is right, however, in remarking that "treatment is unsatisfactory," if by treatment he means trying to rid the circulation of the embryos. Experiments in India have failed to show that any drug so far tried, will remove permanently the *F. sanguinis equi* or the embryos of *F. evansi*.

Treatment of Summer Sores. Under "Nematodes in other situations," he says: "Summer sores in equines, caused by the *F. irritans* are best treated by complete excision of the granulations, and the application to the wound of strong antiseptics, such as 30% copper sulphate solution," and so on.

For summer sores as seen in India such treatment would be disastrous, and has been proved so

by experience. I cannot here go into the many forms of treatment tried in India with varying success, but it may be of interest to record that a single dose of atoxyl subcutaneously, *not* near the seat of the lesions, caused complete and early disappearance of the lesions in two cases. Excision of the lesions would be most heroic treatment—considering the fact that the lesions disappear by themselves at the end of each hot weather, as the name “summer sores” implies. “Prickly heat” in horses is one and the same disease. The lesions are often gigantic, and cover several square feet of the body surface. The cause is not, of course, the *F. irritans* itself, the adult worm being unknown. It is the larval form, constantly found in the lesions, to which the disease is attributed. Had Prof. Craig used, in connection with summer sores, the very words he uses for *F. hæmorrhagica*, they would have been singularly appropriate:—“If the affected areas are kept clean and undisturbed, the disease spontaneously disappears.”

Treatment of Onchocerca. Prof. Craig says; “No satisfactory treatment is applied to the worm nodules caused by *Onchocera gibsoni*.” But is any treatment required? The presence of the worm nodules is generally quite unsuspected till the carcass is opened, after slaughter for food. These worm nodules existed unnoticed in cattle in every Presidency in India, and also in Ceylon, until they were “discovered” in the year 1913, and would probably not have been seen then had not Dr. Sweet, from Melbourne, when on a visit to India, asked us to search especially for them.

It is *prevention*, from a meat inspection point of view, *not treatment*, that is aimed at.

Eggs in fæces—adults not found. Again he says: “In one case, in the horse, I have found eggs of strongyles in the fæces, and on post-mortem could find no worms in the alimentary canal.” I have experienced this in sheep and cattle, not once, but over and over again, and have been puzzled by it. I don’t say there were no worms at all, but often worms corresponding to all the varieties of eggs in the fæces were not found. I selected animals suffering from parasitic anæmia—known to natives as “gillar,”—and after repeated examinations of the fæces at intervals, and sketching every egg to be found, I would destroy the animal and compare the sketches with another series of sketches of eggs from the uterus of every species of worm found on p.m. In this way one soon readily recognises the egg of every worm commonly inhabiting the alimentary canal, and can spot any strangers at once.

I have often felt there is much need of an atlas showing all species of worms in all animals, and the appearance of their eggs as found in the fæces. Such an atlas would be a most useful guide to the practitioner in diagnosis.

Bacterial invasion. Mr. Norris “would like some specific instance of disease proved to be due to the co-operation of nematodes and bacteria.” An excellent example is seen in the case of guinea-worms in dogs. Abscess formation is the rule, and death in dogs from pyæmia or septicæmia not un-

common. I think, however, that the theory as to general bacterial invasion from the alimentary canal being brought about by nematodes is usually somewhat exaggerated. The bacterial invasion seems to be purely a local one into the wall of the alimentary canal *in most cases*, and it is not until invasion takes place at innumerable points from large numbers of parasites, thus interfering with absorption, that the general bodily condition is affected. This is noticed particularly in sheep harbouring the *Stilesia globipunctata*. The invasion of the system by bacteria from the bowel, appears, *in most cases*, to be held in check by tissue reaction in the wall of the bowel, at the point where the nematode or parasite enabled the bacteria to penetrate, and the bacteria do not seem to gain further entrance into the system. For example, in the nodules caused by the young forms of *Æsophagostoma columbianum*, or, where immature *amphistomes* penetrate the bowel wall. In the latter case particularly I have often cut sections of the wall showing the amphistomes and bacteria in the wall tissue, but the bacteria penetrate no deeper than the parasites, and a wall of leucocytes is thrown out to protect the system. The same kind of thing is seen in the case of *Spiroptera megastoma* and *S. microstoma*, and on a larger scale. The bacterial invasion has resulted in a local tumor merely.

But there are some cases where bacterial invasion does take place, resulting in a general infection and death. I have had several cases of anthrax in horses, and have made careful post-mortems to show that infection undoubtedly took place from the large bowel, and where it did seem very highly probable that the spores of anthrax gained entrance from the lesions caused by the *Cylichostomum tetracanthum* which were present. Another, and an undoubted instance of parasites causing a general bacterial infection (although not nematode) is where the embryos of *Linguatula tenioides* leave the alimentary canal to invade the mesenteric glands, causing peritonitis. I have a specimen of mesenteric gland, from an instance of this in a buffalo, showing the suppurating orifice leading from the interior of the gland to the peritoneal surface. I believe Leese also attributed a case of peritonitis in a camel to this cause. I have some sections too of linguatula larvæ *in situ* in a mesenteric gland to which they have conveyed bacteria. They cause suppuration in the glands but apparently only very rarely, peritonitis.

Bursati—causation. I was very glad to find that Prof. Craig did not mention bursati as caused by filarial embryos. Perhaps he does not believe in the connection, or he would surely have touched on this point?

Lingard worked on this idea, but a careful perusal of his pamphlet will show how slender were his foundations. No one else appears to have seen his “felted aggregations of dead filarial embryos.” I had the opportunity of examining some years ago a section of bursati tissue carefully preserved for many years by an A.V.C. officer in India, and regarded by some senior A.V.C. officers as absolute proof of Lingard’s contentions. The “nest of em-

bryos" was probably a coil of elastic fibres, but they certainly were *not* filarial embryos.

Balfour, in the Soudan, a few years ago wrote an article in the *Journal of Tropical Medicine and Hygiene*, in which some astonishing statements were made about bursati and filarial embryos, and I wrote to him on the subject. In reply he told me he wrote the article merely to give rise to discussion, and I think I am right in saying that again there was no proof of any connection between disease and the embryo. The occurrence of filarial embryos and bursati in the same animal is a pure coincidence, and not surprising when one considers how common they both are.

The finding of filarial embryos locally in cases of bursati is probably due to a mistake in diagnosing a small "summer sore" as a bursati tumor.

If the meetings of the Veterinary Medical Association of Ireland often produce such an interesting paper and such a highly entertaining discussion, one can only wish they would meet more frequently!

Since the above note was sent for publication I have seen Mr. Evelyn Place's article in *The Veterinary Record* of September 11th. He says; "In 1898 the writer's investigations in India definitely fixed the blame for that form of cutaneous filariasis of the horse known as bursatee on members of the fly family."

Unfortunately for this statement we, in India, now know that bursati is *not* a form of cutaneous filariasis.

Possibly the infection of the membrana nictitans which Mr. Place saw was a "summer sore," it could not have been *true* bursati I imagine. If it was, it was a double infection.

Mr. Place incriminates musca and stomoxys, and in the same breath talks of the "absence of bursatee from fly-free areas." Does he seriously mean us to believe that *any* part of India is free from the familiar house fly, and the almost as familiar stomoxys? I fancy his phrase "fly-free areas" is borrowed from a study of Tabanidæ and Trypanosomiasis, and his entire para. 2 leads me to conclude that at any rate as regards bursati he has been too much "working on the hypothesis laid down by the Arabs."

If the membrana nictitans affections in India, which Mr. Place dealt with, were not "summer sores" (I hardly think they were), they were probably similar cases to those he describes in appendix B, which are common enough in India, except that in India we examine a scraping from such epitheliomatous growths *before* removal and find living filarial embryos, and after removal we section the growths and find them to be usually an epithelioma and sometimes a sarcoma. I cannot say that I ever regarded the filarial embryos as the cause of the neoplasms, but looked on them as a contamination.

In India filarial embryos are sometimes found in most unexpected situations. I once had a case in a horse which in some clinical respects resembled glanders. I tested with mallein and got no reaction; then examined an open discharging skin

lesion and found filarial embryos in the discharge. A single dose of atoxyl caused the lesions to heal rapidly, and at the time I concluded the embryos were the *cause* of the trouble, though I had some doubts about it.

Bursati is a circumscribed new growth of varying size on the skin of equines, usually firmly attached to the underlying tissues, and with a hairless, weeping, red, eczematous-looking surface. On macroscopic section it is extremely hard and fibrous, containing small cavities a few centimetres in diameter in which is found the characteristic calcareous deposits known in India as kunkur. On microscopic section it is a pure fibroma. The kunkur appears to consist of amorphous salts of lime. The cause is of the nature of a streptothrix found in the tissues where the healthy skin is being invaded at the circumference of the tumor. Infection is probably caused by inoculation through an abraded surface. It can be cured by constant and careful treatment, by repeated application of silver nitrate stick to the circumference where skin and tumor join, and the application to the entire surface of Tr. iodine and zinc ointment alternately, roughly on alternate days, the iodine being to burn the surface and the zinc ointment to remove the dried scabs and give a new surface for the action of the iodine. When the growths are sufficiently reduced in size they may be removed surgically.

I give it as my firm opinion that bursati has no connection either with embryonic or adult filariæ or with flies.

S. H. GAIGER, I.C.V.D.

INTERDIGITAL ABSCESS IN THE DOG.

By GEORGE YATES, M.R.C.V.S., Harrow.

I was pleased to see some notes upon this interesting subject by my friend Mr. Ripley in your issue of August 28th, and, like him, believe the designation of eczema to this trouble is erroneous, since the swellings contain pus. Like him, I think the cause is local, and has its origin in the parts affected, and is not general or constitutional as sometimes supposed. It is true that it often occurs in gross and unhealthy dogs, and from my experience I cannot say that any particular breed is specially susceptible. The terrier breeds, including the Scottish terriers would appear to be so, but this is due to their general popularity. During the course of a year I have occasion to treat about one hundred cases: simple poulticing, lancing, etc., appear to be futile, since the abscesses again recur, whilst the application of iodine or caustics constitute cruelty. In country districts, upon incision of the abscess a piece of false barley or other grass is occasionally found, but in town, amongst the many cases encountered I have only come across one instance of this. Abscesses are more common in wet weather, on the wet London clayey soil, whilst the nature of the road surface (tarred, etc.), appears to have some influence.

Sometimes, upon excision, granules of melanin are found, and in most cases a fine membranous sac; whilst in more advanced cases a great deposit

of inflammatory or fibrous tissue, whilst the skin above is considerably thickened, and in long chronic cases a fistula is established.

Regarding the disease as of a localised character, I have not tried vaccine treatment, so can express no views upon this.

Infection taking place from the under surface of the pad, as Mr. Ripley suggests, may be probable, whilst wet, dirt, tar, or other substances gaining access to the interdigital space, matting the hair in this region, obliterating small orifices of sweat or sebaceous glands, producing a back pressure with subsequent suppuration, has appeared to me a more cause, in the same way that the anal gland, when its contents become inspissated prevent the escape of its secretion, and pus formation ensues. Reasoning so, and that extirpation of the whole abscess, fibrous tissue, etc., be carried out, the results have been most satisfactory, and many troublesome cases so treated have experienced no recurrence, except that other interdigital spaces in some have later required similar treatment. Many cases, of course, are entirely lost sight of, so it has been impossible to obtain any statistics, but notes made at the time of operation upon many others show no recurrence of the trouble in the same interdigital space.

General anaesthesia is not necessary. The application of a reliable local anaesthetic, like codrenine or sanspeine, give complete insensibility to the part. The hypodermic needle must be very fine for this—an all metal dental syringe with extremely fine interchangeable needles, to which the patient does not object; and inject in a few places around the region. After anaesthesia is complete a wide elliptical piece of skin is removed, together with fibrous tissue if present, exposing the parts underneath, and all trace of disease tissue is dissected out. An antiseptic dressing and bandage completes the work. The edges of the wound must not be allowed to unite too quickly, and must be pulled apart at each subsequent dressing. A very sharp scalpel is necessary, and a good pair of lock forceps to remove all traces of diseased structures, together with the fine membranous sac; for if this is not thorough, or is rendered incomplete by the patient struggling if the anaesthetic is not properly applied, their recurrence is inevitable. The syringe I refer to is called the Continental Dental Syringe, having metal cylinder, metal plunger, with impervious non-leak washer, and the needles used are the Aseptic Dental Hypodermic Steel Needles. These are very cheap, and a fresh one can be used for each case if desired. The syringe will force the anaesthetic into the hardest structures, and is most useful for any form of operation.

ABSTRACTS FROM FOREIGN JOURNALS.

SOME LESIONS OF THE EQUINE RESPIRATORY TRACT RESEMBLING GLANDERS.

In horses, it is not rare to find lesions which more or less distinctly resemble those of glanders. Joest records some of these cases (*Zeitschr. f. Infektionskr. u.s.w.* 1915). Two were cases of tuberculosis of the pituitary mucous membrane,

one was an amyloidosis of the nasal cavity, one was a hæmorrhagic lesion of the pituitary mucous membrane due to purpura hæmorrhagica, and the fifth was a case of marasmic ulcerations of the larynx.

In the two cases of tuberculosis of the pituitary membrane, the lesions bore an evident resemblance to those of glanders. In one case there were numerous hemispherical elevated whitish-grey nodules of various sizes up to that of a linseed upon the left side. Around these nodules were irregular ulcers which reached up to the size of a centime, with elevated edges. On the right side the ulcers were larger and more irregular, and their edges were more elevated. Upon the anterior part of the mucous membrane the lesions were less serious; in the cranial portion, in the neighbourhood of the the nodules upon the left side, there was an oval opening about the size of a five-centime piece, limited by a greyish thickened tissue.

Histological examination revealed many giant cells, epitheloid cells, and leucocytary elements. There were also young connective tissue cells irregularly disposed. The larger nodules showed some signs of degeneration. The ulcers, which were necrotic at the base, had undoubtedly developed by the discharge of necrosed masses from the nodules. The lesions contained tubercle bacilli. Lesions of miliary tuberculosis were also found in the lung.

The second case was a horse which had been killed because it was suspected of glanders. The lesions were less serious than in the first case. The surface of the pituitary mucous membrane was rendered unequal by cicatrices, among which ulcers were also found. The general colour of all the diseased parts was greyish, and the tissue was remarkably firm in consistence. The nasal cartilages were normal.

Histological examination revealed tuberculosis, which was also confirmed by the presence of tubercle bacilli. Tuberculous lesions were also found in the liver and spleen.

Joest, in discussing the differences between tuberculous and glanderous lesions in horses, points out one difference in the appearance in the large cicatrices of the nasal septum which are seen in both diseases. Those of tuberculosis are irregularly disposed, while those of glanders have a fine and radiated or stellate structure. Moreover, verrucose growths are not seen in glanders. In other respects, the cicatrices of glanders and tuberculosis do present a certain similarity.

Various authors (Rabe, Grawitz, Piana, and Stazzi), have noted that amyloid degeneration of the nasal cavities may often present lesions suggesting those of glanders. The case Joest now records was seen in a mare. The left nasal cavity contained a small nodule which, when histologically examined, showed a thickening which involved the mucous membrane proper, the submucous tissue, and the papillary bodies. The mucous membrane and submucous tissue contained strips of connective tissue much enlarged and united into a homogeneous mass, which gave the peculiar staining reactions of amyloidosis. It is true, however, that in such cases as this there is not much likelihood

of the lesions being confused with those of glanders. Among the chief points of differential diagnosis mentioned by Joest are (1) that amyloid nodules never present ulcerations similar to those which are common in glanders, and (2) that in amyloidosis there is less tendency for the lymphatics of the region to become involved than in glanders.

In some infections of the horse there are ecchymoses or hæmatomic nodules of the nasal cavity which may suggest glanders. In animals hyper-immunised against anthrax (horses which are used to produce anti-anthrax serum) punctiform hæmorrhages or hæmorrhagic spots of the nasal mucous membrane are often seen, nearly always without any lesions of the conjunctiva and skin. Most frequently resolution takes place in a few days. It is certain that in purpura hæmorrhagica similar lesions have been observed in the initial stage of the disease; and Joest has seen one atypical case of purpura hæmorrhagica which suggested glanders.

Joest's fifth case showed peculiar post-mortem lesions of the larynx. Each of the two sides of the arytenoid cartilage had an ulceration on its inner aspect in the vicinity of the dorsal margin. The right ulcer was the size of a pea, and the left one that of a bean. They were oval in shape, smooth-edged, and partly covered by a greyish mass of tissue. These lesions, however, did not show the specific characters of glanders lesions, *viz.*, thickness and corrosion of the edges of the ulcers; and the other lesions which generally affect the mucous membranes in glanders were absent.

The horse in question had been ill for three months; and tracheotomy was performed upon him. Double pneumonia, however, developed; and afterwards the animal died in a condition of very severe marasmus. Marasmic ulceration of the larynx, in the form above described, is unusual in animals.—(*La Clinica Veterinaria*).

EFFECTS OF ORDINARY SALT AND ROCK SALT ON FATTENING CATTLE AND SHEEP.

These trials have been made at Cockle Park, the Northumberland County Agricultural Experiment Station, and include trials with fattening cattle and with fattening sheep.

1. Trial with fattening cattle 18-24 months old; winter of 1914-1915.

Twenty-four cattle just over eighteen months old in November, 1914, were used in this trial. They were all bred at Cockle Park, twenty-two of them being blue greys from a white shorthorn bull and Galloway cows, while two were from a white shorthorn bull and Aberdeen Angus cows. They were divided into eight lots, three beasts in each lot. Lots A, B, C, and D were bullocks and were fed in boxes, there being one box for each lot. Lots E, F, G, and H were heifers and were fed in stalls. The trial began on November 19th and ended on March 11th. The main objects of the trial were to test the feeding of the cattle:—

- Without salt.
- With free access to lumps of rock salt.
- With one ounce of salt added to the food daily.

The feeding rations. The daily rations fed per 1000 lb. live weight were as follows:—

Foods.	High swede ration.		Low swede ration.	
	Lots C, D, G, H.		Lots A, B, E, F.	
Swedes	84	lb.	28	lb.
Meadow hay	14	lb.	21	lb.
Soya cake	3½	lb.	2	lb.
Bombay cotton cake	2½	lb.	4	lb.
Bran	2	lb.	3½	lb.

As the average weight of the bullocks at the beginning of the trial was about 7½ cwt. live weight, and of the heifers 6½ cwt., the daily rations fed were considerably lower than the foregoing in the earlier months of the trial. Towards the end the bullocks were receiving more than the foregoing, as their average live weight was greater than 1000 lb., but the heifers did not reach 1000 lb. live weight at the end of the trial.

Results. The results show that the bullocks which received no salt gained on the average 17 lb. weekly in live weight, while the bullocks which had access to rock salt in the feeding troughs gained 16½ lb. weekly. The heifers which received no salt gained on the average 12½ lb. weekly, while those with one ounce of salt daily mixed with their concentrated food gained 13 lb. weekly. These results show that the salt had practically no effect, either with the bullocks which had access to rock salt, or with the heifers to which one ounce of salt was fed daily.

Salt in swedes. The bullocks receiving the heavy root ration did rather better when they had access to rock salt, but not so when they were receiving the light ration of roots; and the same results were noted with the heifers.

Mr. S. H. Collins, College Advisor in Agricultural Chemistry, found that the swedes fed to the cattle, and sampled on January 26th, contained 10.64 per cent. of dry matter, including .02 per cent. of salt. The cattle therefore, consuming 84 lb. swedes daily would receive about about ½ oz. salt daily in the swedes they ate, whereas those consuming 28 lb. daily would receive about 1/12th ounce of salt in the swedes.

High and low swede rations. From the results it was found that the bullocks receiving 84 lb. swedes daily gained on the average 18½ lb. live weight weekly, while those receiving 28 lb. swedes daily made live weight gains of 15½ lb. weekly. On the other hand the heifers receiving the high swede ration gained 11½ lb. weekly, whereas those receiving the low swede ration gained 13½ lb. weekly. On the average, therefore, practically the same feeding results were obtained from the high and the low swede rations, thus confirming former results at Cockle Park—that substitutes for a large amount of swedes can be used that will give equivalent results, consisting of concentrated foods and fodder, provided they contain the same nutrients.

2. Trial with fattening sheep in sheephouse, winter, 1914-1915.

The sheep used in this trial were 48 half-bred hogs, which had been bred at Cockle Park in season 1914. Three lots of 16 in each lot were fed in the sheephouse. Each of the lots were in four pens, four hogs in each, two of the pens being to the east and two to the west. A preliminary period of a fortnight preceded the trial. The hogs were valued at 33/6 a head on November 7th, and as they realised 5½d. per lb. live weight when sold, their value when the trial ended was just over 57/- per head.

Daily feeding ration. The daily ration per 100 lb. live weight (practically per head) was:—

Turnips	10.7	lb.	Soya cake	.4	lb.
Meadow hay	1.2	lb.	Bombay cotton cake	.4	lb.

Lot 1 received no salt, Lot 2 had access to rock salt, and Lot 3 had ½ oz. common salt daily in the concentrated food.

Results. The results show that the sheep in Lot 1, receiving no salt, gained on the average 1.87 lb. in live weight weekly; those in Lot 2, with access to rock salt, 1.67 lb.; and those in Lot 3, with $\frac{1}{2}$ oz. common salt fed daily with concentrated food, 1.76 lb. Salt, therefore, either in the form of rock salt or as common salt fed with the concentrated food, has not been an advantage, but rather the reverse.

Summary of results. These trials were made because it has not been the practice at Cockle Park to use salt for fattening cattle, store cattle, or sheep, either indoors or on pasture. The object of the trials was to ascertain whether the live stock should have access to rock salt, or should have ordinary salt mixed with their food.

The foregoing trials clearly indicate that salt is not required for fattening cattle or sheep fed indoors at Cockle Park. It looks as if the foods fed to the live stock at Cockle Park contain a sufficient amount of salt, and that, therefore, the addition of salt is not required.

In the foregoing trials the prices of the foods were taken as follows:—

Swedes	per ton	£	10	0
Meadow hay			2	10 0
Oat straw			1	15 0
Soya cake			8	15 0
Bombay cotton cake			6	2 6
Bran			6	5 0

Cockle Park is about six miles from the east coast, but the prevailing winds are from the south west.

DOUGLAS A. GILCHRIST,
Director on behalf of Armstrong College.

The Sudan Veterinary Service.

Of the several Sudan Government administrative branches none has been organised or conducted with greater care, nor, it may be added, met with a greater amount of success than that of the Veterinary Department. There has been cattle plague in the Sudan at all times—both before the British Occupation and afterwards—and it may be assumed that, notwithstanding all the care and prevision of the authorities, it always will exist to some extent. Within recent weeks the disorder has again broken out in the Nuba mountain Province, especially in the Eliri and Talodi districts, where as many as 5060 different inoculations have been made at one visit by the surgeons. This particular form of the malady is known locally as the "Abu Gineit" disease, and it is sufficiently serious to engage the closest amount of attention upon the part of the authorities. Not the least of their difficulties in dealing with it is the fractious opposition shown by the native cattle-owners to their interference. Instead of welcoming the assistance offered, and which is rendered almost free of expense to them, the ignorant Arabs believe that the surgeons instil, instead of exterminate, the complaint, and nothing convinces them to the contrary. Even if a cure be effected, the ungrateful proprietor of the sick beast or beasts declares that it was "Kismet"; while if by chance the animal or animals should die, then it is the English devil-doctors who have killed them. The average Arab, indeed, often recalls the witty saying of Disraeli, who once declared that "Mr. Kremlin himself was distinguished for ignorance, for he had only one idea, and that was wrong."

The Sudan Government Veterinary Department entails an annual outlay of something over ££27,000, while, as the receipts fall short of ££10,500, it will be recognised that the branch is carried on at a substantial loss. Nevertheless, it is one of the first importance, and could not be abandoned or even reduced in regard to its complement were the loss entailed to amount to double.

The receipts earned are in the form of quarantine fees, which usually account for the greater part of the revenue, viz., between ££8500 and ££10,000 forming the total receipts of ££10,500. The remaining payments include inspection fees (in 1913 these actually amounted to about ££1250), charges for loading and unloading animals, and other small demands.

On the other hand, the department maintains a very considerable staff of competent and experienced veterinary surgeons, in addition to one director, whose annual "allowance" is ££450. The department is divided up into six sections: the veterinary, the quarantine, the veterinary survey, the breeding, the accounts, and the stores. Each of these sections has an assistant director or inspector, who is assisted by either a British or an Egyptian officer. The highest regular salary paid in this department is one of ££840, received by the two assistant directors of the veterinary and quarantine sections, while the lowest is one of ££150, received by the storekeeper, who usually is a British non-commissioned officer. Naturally the number of officials allotted to each province varies with the particular size of the province and the number of cattle to be found there. Thus Kordofan has the services of two veterinary inspectors, while all the rest have but one. Latterly there has been an increase in the cost of almost all the supplies and equipments of the department, due to the rise in the prices of practically everything required. For instance, the amount allocated in 1913 for forage stood at ££570, while for 1914 it had increased to as much as ££1000; travelling allowances advanced over the same period from ££700 to ££925, drugs from ££150 to ££200, grooms' allowance ££180 to ££256, and climate allowance from ££200 to ££260. The economies effected included a reduction in the purchase of serum from ££2160 to ££1698; extra pay for medical and veterinary officers for inspection of meat, cattle, etc., from ££400 to ££94; and special expenditure in connection with cattle plague from ££540 to ££400.

At the time of the second British Occupation the Sudan was found to be reeking with disease, both among cattle and human beings. By the end of 1906, however, an immense improvement had manifested itself in both, and particularly among the dumb brutes. Colonel Griffith, writing on the subject, declared that "at the present time cattle plague seems to be nearly eradicated from the Sudan." As has already been pointed out, however, the country can never be considered as free from danger of infection, as the disease is enzootic in Erythræa and Abyssinia. The only means of stopping infection is by having strict cattle plague supervision on the frontier. However vigilant this may be, it is practically impossible to detect cattle being passed at night across the border, especially in dense, bushy country; while an additional danger arises from infection through game and other wild animals. The posts established by the Government, and served by both mounted and unmounted police, for the purpose of watching what goes on, undoubtedly have proved useful if—for the reasons explained—only partially successful.

Unquestionably the most effective step taken by the Administration was that in 1913, when there was established a clearer division of duties of the officials, then only made possible by an addition to the staff of six inspectors, while the service at the same time was subdivided into the four main channels: general veterinary, veterinary survey, quarantine, and breeding—already referred to. Now each section inspector is made responsible for the interests with which his particular section is identified. The six additional inspectors who joined the Government service were Capt. E. C. Webb (serum expert), who is established at Cairo; J. R. Bosley, at Gedaref, in the Province of Kassala; L. Danels, at Merowé, in the Dongola Province; A. C. Anderson, at Halfa, in the Halfa Province; F. Roche Kelly, at Wad

Medani, in the Province of the Blue Nile; and W. F. L. Bright, who is stationed at Shendi, in the Berber Province. The Director of the whole Veterinary Department is Major F. U. Carr, who has been in the Government service since September of 1908. The assistant director is Capt. G. P. Knott, who boasts but one year's service less to his credit, having joined in January of 1909. Five of the staff are stationed at Khartoum, and altogether the department has the advantage of seventeen British officers, several British non-commissioned officers, and two Egyptian officers, seconded from the Veterinary Department of the Egyptian Army, and who are now employed in the Red Sea Province.

The department was framed—as have been so many others of the Sudan Administration—with great vigilance for the future requirements of the fast-growing country. Thus, in regard to organisation, it was from the first looked upon as imperative that, as funds were forthcoming, a foundation in the shape of a British staff should first be established; this having been accomplished, there came the super-structure, a staff to satisfy requirements, selected and trained from among the inhabitants of the country. The object aimed at has been achieved with great trouble and much success: the progress hoped for has been attained to an altogether remarkable degree, and the excellent work undertaken and pursued—not unseldom in the face of the most tiresome and discouraging conditions—goes steadily forward.—*The Near East*.

OBITUARY.

MARCUS J. STEVENSON, Capt. A.V.C. (T.F.)
Graduated, Glas.: Dec., 1888.

News has been received of the death of Capt. Stevenson on Sept. 10th, at Abbaseyeh, Egypt. He had an extensive practice at Finchley, London, N., and joined for active service soon after the commencement of the war. His age was 49 years.

DUTIES OF THE A.V.C.

Dear Sir,—With reference to the enquiries of "Curiosity" in your issue of Sept. 4th, "Curiosity" will do well to write to the War Office direct before accepting the statement of "W. H. B." in your last issue, that "the Authorities ask primarily for professional ability," when he will find that this is not correct, and that professional experience is quite secondary, as is also previous experience on active service.

"Curiosity" is right in stating that information (of the right sort) is keeping many members from going to do their best.—Yours truly.

"BETA."

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Sept. 9.

REGULAR FORCES. ARMY VETERINARY CORPS.

C. Budd to be temp. Quartermaster with hon. rank of Lieut. Dated Sept. 10.

Sept. 11.

To be temp. Lieuts. :—

J. F. Donnelly. Dated Aug. 3.

W. H. Tummonds. Dated Aug. 8.

Sept. 14.

Temp. Lieut. A. S. Leese to be temp. Capt. Dated Sept. 15.

To be temp. Lieut. :—R. G. Gray. Dated Aug. 17.

Sept. 15.

Temp. Lieut. F. B. Barling relinquishes his commission on termination of engagement. Dated Sept. 11.

To be temp. Lieut. :—G. H. Broad. Dated Sept. 1.

Sept. 16.

To be temp. Lieut. :—W. B. Cronyn. Dated Sept. 1.

Sept. 9.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Capt. R. Finch, N. Zealand Army, Vety. Dept., to be Captain (temp.). Dated Sept. 10.

Sept. 14.

Captains to be temp. Majors :—

J. Abson, F.R.C.V.S. Dated Aug. 6.

J. A. Connell. Dated Aug. 17.

R. G. Anderson. Dated Aug. 25.

Lieut. J. A. Dixon to be Capt. Dated Sept. 15.

The A.V.C. Comforts Fund.

Dear Sir,—I have pleasure in again forwarding lists of subscriptions received and kind contributions sent for the Army Veterinary Corps Comforts Fund. Also I enclose copies of some letters which will show how the comforts are appreciated.

Owing to my impending change of residence at the end of this month, I am asking all contributors to kindly delay sending parcels until after October 1st. I shall then be delighted to receive all gifts sent for the Comforts Fund.

May I again remind those who have books, magazines, papers, games, etc., to spare, how appreciated they will be in the men's reading rooms and canteens. If sent to me I will forward at once.—Yours truly,

ADELAIDE M. MOORE.

Further Subscriptions received from :—

Mrs. Shelton Jones (proceeds entertainment)	£2	2	0
Dr. S. Brenton (Detroit Vety. Sanatorium)	1	0	0
Lieut.-Col. F. C. Stratton	5	0	0
Mrs. Helena Harvey (proceeds Garden Fête)	4	0	0

Parcels received from :—

Mrs. Garnett, Mrs. Bolton, Mrs. Rutherford (9th and 10th contribution), Mrs. Scott (Leyton), Mrs. Burke Savage: also 20 beautiful cardigan jackets as forwarded to me by order of Mr. J. Smith, J.P., Vety. Department, Livingstone, Northern Rhodesia.

From the Matron, Red Cross Hospital, No. 7 Veterinary Camp :—

"I am writing to thank you for the splendid lot of comforts you so kindly have sent us. I have only now had time to stock my linen cupboard with the excellent supplies you sent. I wish you could see how comfy and cosy the laddies are in the warm bed jackets, and how up-to-date in their blue suits and red ties. The beautiful woolly blankets I wrapped round my poor little fractured skull patient, and they certainly helped his recovery during his collapsed condition. The socks I always require, and the underclothing is also most welcome."

From O.C. No. 16 Vety. Hospital, Advanced Base. Gallipoli Peninsula :—

"Very many thanks indeed to you and the many kind contributors to the A.V.C. Comforts Fund for the splendid gifts of socks, cardigans, stationery, cigarettes, etc., which were received on Saturday last. We managed to distribute suitable gifts to each N.C.O. and man according to their individual wishes, and I enclose letters from a sergeant, corporal and private. You will see how thoroughly they appreciate the kindness in thinking of them in this far away 'Colony.'"

The private writes:—

"I have to thank you on behalf of the men of the 16th Vety. Hospital, in the Mediterranean, for the gifts received on the 28th Aug. I must say that all the men of the section are highly delighted with the gifts, which were very acceptable and appropriate. I can assure you we all appreciate the efforts of the veterinary officers and members of the profession and their families in making such a fund possible. We are all very grateful for your kindness."

I may add, I have since despatched two large consignments for our men in the Gallipoli Advanced Base. I am sure they deserve all the comforts and cheer we can send them to brighten their trying experiences in those inhospitable regions.

An experience in the torpedoed Hesperian.

Mr. Henry G. Bowes, F.R.C.V.S., of Leeds, with his wife and child, were among the passengers of the torpedoed liner Hesperian.

For the past eleven months Mr. Bowes has been touring Canada and the States with the British Remount Commission, and he returned to England about a month ago on a few weeks' leave of absence.

In an interview, Mr. Bowes said, "After dinner on Saturday evening Mrs. Bowes and myself were on the deck, having put the child—a little girl of three—to bed. We were just congratulating ourselves that we were practically out of the danger zone, when a terrific explosion occurred, followed by an avalanche of water over the ship. We were, of course, drenched through to the skin. I knew what had happened. We rushed down into the cabin for the little girl, who was asleep in her bed. I put her a lifebelt on, and having provided my wife and myself with lifebelts, we went on deck again.

By that time we found a boat there nearly full of passengers, and ready for lowering. I put my wife and child into it. In that boat before it was picked up there were some sixty persons. My wife did not like the idea of going without me, but at that time there were other women still to be got off the liner, so, knowing that I was well equipped with a lifebelt, and that the Hesperian would not sink for some considerable time, I had made up my mind, in the event of there not being a boat available, to take to the water, and chance being picked up.

Fortunately, in the meantime, the officers were bringing boats which had been standing by, and which were not full, back to the liner, so I climbed down into one of these. After about a couple of hours had elapsed we were picked up by a steamer. I can tell you I was very thankful when I got on the steamer, and found my wife and child there.

There were some exciting moments as the boats were being lowered. Owing to the darkness some difficulty was experienced, and in the hurry some of the boats not lowered horizontally, with the result that some of the passengers were precipitated into the sea, and in two instances boats were swamped by getting into the outflow from the condensers. The sea was beautifully calm—on the previous night it was just as rough. The behaviour of the passengers generally was admirable, especially the women."

Mr. Bowes paid a high tribute to the First Officer (Mr. Richardson), who was responsible for getting several boat-loads of passengers from the doomed ship.

The method by which the life-belts are brought into use on the big liners was the subject of strong criticism by Mr. Bowes. "There is nothing done to destroy the air of ridicule as to the wearing of life-belts. The proper thing would be to insist that all passengers

should have a life-belt when they are passing through the danger zone. As it is, the life-belts are in the cabins, and in the rush there is no getting to them. We had the greatest difficulty to get ours. I think it is absolutely essential that they should encourage people to take life-belts about with them when within the range of hostile submarines. It's no good saying there's one in the cabin when the boat is going down."—*Yorkshire Evening Post*.

Accident to a Motor.—Action by V.S.

In Kirkcudbright Sheriff Court on Sept. 3, the record was closed in an action at the instance of Mr. John Baird, M.R.C.V.S., 35 Castle Street, Dumfries, against (1) Messrs. W. T. Henley's Telegraph Works Company, Ltd., 59 Waterloo Street, Glasgow; (2) the Provost, Magistrates, and Town Council of the burgh of Maxwelltown as road authority of said burgh; and (3) the Right Hon. Robert Munro, K.C., M.P., his Majesty's Advocate, representing the Post Office. Pursuer claims from the defenders jointly and severally, or severally, the sum of £41 7s. 3d., in respect of an accident to his motor car. He states that on the afternoon of 23rd December, 1914, while motoring towards Dumfries, he was precipitated into a hole in Galloway Street, Maxwelltown, which had been excavated by the first-named defenders on behalf of the Post Office. The hole was not protected, nor was there any person or light there to warn the travelling public of its existence. The car was badly damaged, and he claims: For hire of car while it was being repaired, £17 4s. 9d.; repair of car, £4 2s. 6d.; for depreciation of car, £20.

Messrs. Henley deny that the hole was excavated with their consent or under their supervision. The damage sustained by the car, if any, they say, was trifling.

Maxwelltown Town Council explain that the hole was covered by a tent about five feet high. It is also explained that the obligation to place lights at any excavation in the street of a burgh rests upon the person making it; not on the Town Council. It is explained that the Postmaster-General intimated to the Town Council his intention to lay underground telegraph in the burgh and to make good any damage. The excavation was not made on behalf of the Town Council.

The Lord Advocate explains that the hole was made by the first-named defenders in the performance of a contract which they were executing for the Post Office. It is believed that the pursuer's car was slightly damaged, and that the sum claimed in name of damages is excessive. The Crown and its departments of State are not liable for the faults or negligence of their officers, or for Messrs. Henley or their servants, and there is no jurisdiction either by common law or by statute against the Crown or any of its departments.—*Dumfries and Galloway Saturday Standard*.

Parasitic Mange among Horses.

The following circular has been issued to local authorities in Great Britain under the Diseases of Animals Acts, 1894 to 1914, by the Board of Agriculture, under date September 1st:—

Sir,—I am directed by the President of the Board of Agriculture and Fisheries to acquaint you, for the information of your local authority, that his attention has been drawn to certain cases of parasitic mange found among horses which had a short time previously been cast from the Army, and to the risk of the spread of the disease to other horses with which they were brought into contact.

Lord Selborne has been in communication on this subject with the Army Council, who have suggested that with a view of co-ordinating the efforts being made to control and eradicate the disease, local authorities

might be asked to arrange that information as to cases of the disease found amongst cast Army horses should be at once reported direct to the General Officer commanding the command concerned in order that prompt investigation may be made, and steps taken to prevent further sale of any affected animals which may be discovered as the result of such investigation.

Lord Selborne desires me to request that your local authority will be so good as to make the arrangements suggested by the Army Council, and that such arrangements should apply not only to cases of parasitic mange, but also to the other equine diseases scheduled under the Diseases of Animals Acts, namely, glanders (including farcy), and epizootic lymphangitis.

The various commands and the area covered by each are shown in the monthly Army List.—I am, sir, your obedient servant,

SYDNEY OLIVIER, Secretary.

Losses through suspected Anthrax.

At a recent meeting of the Perthshire Local Authority under the Diseases of Animals Acts, held in Perth—Mr. W. Henderson, of Lawton, the Chairman, presiding—the Clerk (Mr. David Marshall) reported that Mr. W. M. Ferguson had accepted the appointment as veterinary inspector for the East Carse district.

The Clerk submitted the report of outbreaks of disease for the half year. There were 29 cases of anthrax reported, of which the veterinary inspectors diagnosed 23 as not anthrax. In the remaining six cases the inspectors suspected anthrax, but only in four of these cases was the disease confirmed by the Board of Agriculture.

The Chairman said that was an extraordinary state of matters. What was a farmer to do? He had a beast that died. He reported the case as anthrax, but there was no anthrax about it. Three cases happened in his district recently. The four cases confirmed were all in one park, and took place between 12th and 22nd June. It was important for farmers that the facts and history of these cases should be known. This year those 29 cattle might be worth anything up to £30 or £40 each.

It was agreed to try and ascertain the history of the four cattle affected, and the history of the field, especially in regard to manuring. It was mentioned that the farmer entered at Martinmas last, but that the previous tenant was still in the district.

The Chairman pointed out that while the Board of Agriculture accepted as final the report of the local inspector in cases where the diagnosis was negative, they did not do so in cases of positive diagnosis. The risk that the farmer ran was a very serious one, and he wanted to know whether any previous cases were reported or suspected at that place. In ten days this year he lost £100 worth of cattle, and they were not in the same field.

When the veterinary inspectors say it is not anthrax nothing more is done. Here the loss was tremendous—only four out of 29 cases were confirmed—if they took it at only £20 apiece, and a lot of them were worth far more. It was a very serious matter to see probably £600 worth of animals lost for four cases confirmed of anthrax. There ought to be a quicker way of handling them. He thought they ought to write to the Board pointing out the serious loss to farmers, especially in present circumstances.—*The Scottish Farmer*.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.		Outbreaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended September 11	9	10					11	30		39	97
Corresponding week in											
1914 ...	13	14	2	6	3	8	4	4		78	732
1913 ...	3	4			1	1	19	38		30	268
1912 ...	7	8	2	62	8	11	16	18	1	43	840
Total for 37 weeks, 1915 ...	433	494			36	65	‡604	‡1310	161	3093	13703
Corresponding period in											
1914 ...	538	589	22	108	78	231	1526	2638	155	2960	30000
1913 ...	390	430			118	295	1959	3933	132	1790	23834
1912 ...	583	662	77	563	134	247	2381	5139	175	2290	30080

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked:

Board of Agriculture and Fisheries, September 14, 1915.

‡ Figures for twenty-four weeks only.

IRELAND. Week ended Sept. 11	...	...	...	...	...	...	Outbreaks 2	10	5	27
Corresponding Week in										
1914 ...	...	...	...	...	...	...	1	5	1	11
1913 ...	...	...	...	...	...	...	1	7	...	4
1912 ...	...	...	...	...	...	...	...	1	1	6
Total for 37 weeks, 1915 ...	1	1	...	...	1	3	56	306	196	1032
Corresponding period in										
1914 ...	1	1	76	957	...	...	65	397	160	836
1913 ...	...	...	...	...	...	...	102	383	113	693
1912 ...	3	3	27	260	...	...	53	264	180	1499

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Sept. 13, 1915
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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CLINICAL PROBLEMS.

Recently we have had a number of contributions of varying length concerning a subject belonging to canine minor surgery—the condition known as “interdigital abscess.” No one will call the subject a very important one; but all who engage in canine practice will be interested by the discussion upon it. Little concerning it is to be found in our text books; and that little is distinctly superficial. Still less, hitherto, has appeared in our journals. Its etiology is still obscure. Its treatment is very often unsatisfactory; and this, combined with its tendency to recurrence, renders it extremely troublesome. Lastly, it is comparatively common in everyday practice. It is one of numberless clinical subjects concerning which our present knowledge is deficient; and further discussion of it would be welcome.

But does not the last sentence suggest a wider question? How many other such subjects are there, all of more or less importance in practice, regarding which little has been written, and not much can be said to be generally known? All will agree that there are many; few, perhaps, realise how large the number really is. Only those who have studied our journals with more than usual thoroughness know how vast an amount of veterinary experience has never been recorded in their pages.

SWINE FEVER.

The Board of Agriculture has lost no time in following the recommendations of its Departmental Committee; and it is now possible for farmers to obtain free a serum for use against swine fever.

This is our first attempt to deal with the disease on other than stamping out lines; and a great deal will depend upon strict observance of the Board's regulations and restrictions. With such observance, it will be possible in two or three years' time to assess the value of the serum treatment in the field. Without it, we shall only have misleading and probably discouraging results. A good deal may have to be done in the way of supervising and educating farmers; and here is an opportunity for country practitioners to do good work. One who has acquainted himself with the details of the serum treatment, who recognises it for the present as being still largely in the experimental stage, and at the same time works to ensure it a fair trial in his district, may become a valuable auxiliary to the Board.

THE CHANNELS OF TUBERCULOUS INFECTION.

Calmette has published an important work upon this debated subject (*Office interne d'hygiène publ.*). After reviewing various opinions and recording different experiments, he arrives at the following conclusions.

Heredity. It is now definitely established that heredity has no preponderant influence in the transmission of tuberculosis. What is, in reality an infection of the ovum may occur, but it is exceptional; moreover, it is only possible to verify this from the maternal side. *There are no positive facts which establish that an individual may be procreated tuberculous by a tuberculous father.*

Placental Infection. The passage of tubercle bacilli across the placenta in the human subject is exceptionally rare, and only constitutes a factor of minimal importance in the transmission of the disease. In veterinary medicine, it is not rare to find tuberculous lesions, which from their aspect and character should be regarded as of congenital placental origin, in the livers of calves.

Infection by the Skin. The skin is the medium which offers the least favourable conditions for the settlement, penetration, and multiplication of the bacilli. For that reason, despite the frequency with which the skin comes into contact with tuberculous material, tuberculosis of the skin is rare; and, when it is verified, it tends to remain benign and localised.

Infection by mucous membranes. The ocular mucous membrane offers a very easy channel of penetration to tuberculous material. The instillation of a drop of virulent culture into the eye of a guinea-pig causes the development of a typical glandular tuberculosis which in four or five weeks extends to the glands of the hilus of the liver, the mesenteric glands, the spleen and the lung, without causing the slightest lesion in the eyeball and its surroundings.

The healthy nasal mucous membrane, despite the enormous quantity of dust of all kinds which it accumulates, does not permit the passage of the tubercle bacillus. This is because these dusts, microbes, etc., generally exercise a positive chemotaxis upon leucocytes. The leucocytes pass out from the capillaries and submucous lymphatic spaces and englobe the bacilli; but then they are immobilized by the mucilaginous secretion of the muciparous glands, are unable to re-cross the mucous membrane and re-enter the circulation, and are expelled with the mucous discharge. As a matter of fact, bacilli are frequently found in the nasal cavity; but the cases of primary infection of this region are rare.

Bucco-pharyngeal mucous membrane.—Tonsils. Leucocytes which have escaped by diapedesis from the submucous vessels into the bucco-pharyngeal cavity are borne into the digestive tube with the saliva by the movements of deglutition, so that they do not re-enter the circulation with the bacilli they have englobed.

The tonsils, on account of their situation at the entrance of the digestive and respiratory apparatus, constitute a most important system of defence against microbial infections in general. The bacilli are very often destroyed by the lymphoid cells, swallowed or expelled by coughing; but often some migratory phagocytes bear them into the lymphatic circulation, and, in the case of a grave infection, there may be characteristic swelling of the retro-pharyngeal, subparotid, and cervical lymphatic glands as a result.

Genito-Urinary mucous membranes. In this situation the infection is most frequently of hæmogenous origin; but it may occur directly through the vulvar, vaginal, urethral, or visceral mucous membranes by sexual intercourse or by the introduction of infected objects.

Infection by the respiratory passages. In Calmette's view, the old supposition that the tubercle bacillus penetrates the organism habitually or solely by the respiratory passages has now lost its weight. The more perfect knowledge which we now have of the diverse processes of the tubercular infections, and the certainty we have acquired that the bacillary infection remains *occult*—often for a long time and sometimes indefinitely—in the lymphatic glandular system before causing the formation of tubercles capable, as they develop and finally caseate, of releasing bacilli into the lymphatic or sanguineous circulation, enables us to modify the old view.

Mechanism of primary tubercular infection of the respiratory passages. This may be ærogenous or, more frequently, take place by the blood stream from the arrest, in the intra-alveolar or peribronchial capillaries, of some leucocytes containing bacilli recently introduced into the organism or proceeding from some centre of latent infection of varying age.

In an ærogenous infection, the bacilli which have penetrated an aveolus there cause a flow of leucocytes, then a true desquamation of the epithelial cells of the wall, and the whole forms, in the centre of the nodule, an accumulation which becomes organised in the form of a tubercular follicle, which then caseates and discharges caseous material into the neighbouring alveoli. *The evolution of this primarily alveolar lesion, when experimentally produced, is always rapid.* But if the infection is slight, the englobed bacilli re-enter the lymphatic circulation with the leucocytes, and the initial lesions occur at the periphery of the lobule or in the peribronchial lymphatic glands.

A discrete ærogenous infection, therefore, may not provoke any intra-alveolar lesions. (It is stated in a foot-note that examples of this are not infrequently found in cattle. Small tuberculous nodules in the bronchial glands, while the lungs are healthy, are not rare in bullocks and bulls, but are less common in cows. Bougert's view is that, in æro-

genous infection, the bacilli which have reached the lung are englobed by leucocytes and carried to the peribronchial lymphatic glands, where the primary lesion occurs. From this the bacilli may again escape by the blood stream and infect the lung.)

Experimental pulmonary infection with bacilli or with products rich in dried bacilli. Villemin, in 1869, first demonstrated this possibility by means of experiments upon rabbits. Calmette gives a list of some other workers who, while not denying that such infection can take place, regard it as exceptional.

Experimental pulmonary infection with fresh bacilli or tuberculous products in a state of moist powder. All authorities agree that this method of transmission is possible by experiment. But the matter is quite different when we consider the possibility of a natural infection by this channel.

Conditions and relative frequency of primary infection of the lung by inhaled air. Various circumstances are opposed to the possibility of such an infection. Among them are the large filtering surfaces of the respiratory passages, the length of the trachea and bronchi with their lining of vibratile cilia, the reflex irritability which causes sneezing and the expulsion of offensive particles, and, finally, the presence upon all the surfaces of the respiratory passages of glands secreting mucus which impedes the re-entrance of extravasated leucocytes into the lymphatic circulation. In the case of heavy dust, penetration is more easy; but tubercle bacilli within minute particles cannot easily avoid these natural obstacles. Calmette, therefore, while acknowledging the possibility of natural infection of the lung by means of inhaled air, believes that it is much more difficult than is believed, or than would appear from experiments.

Infection by the intestinal tract.—Mechanism of the intestinal absorption of the bacilli, and their migration in the organism. The stratified epithelium of the œsophagus and the thick layer of cylindrical, prismatic, or pyramidal cells of the stomach, and the numerous glands which discharge their secretions at the surfaces of these organs, do not normally permit leucocytary migration across their walls. On the other hand, processes of absorption go on with increasing intensity from the duodenum to the extremity of the small intestine. Microbes and some mineral particles in fine suspension are constantly drawn from the interior of the intestine towards the chyle ducts. This is accomplished by means of migratory cells; and the process is especially well marked in Peyer's patches. The bacilli are borne by migratory leucocytes into the chyle ducts, and follow the course of the lymph. Multiplication of the bacilli may cause the death of the leucocytes and the formation of tubercles by endothelial reaction along the course of the lymphatics. But if the bacilli are few or not very virulent, the leucocytes which have englobed them may not die, but preserve their motility and finally become arrested and die far away from the original point of entry of the bacilli. Here a capillary embolus is formed, from which a tuberculous process originates; and the organ which is anatomically most exposed

to such an infection is the lung. The apparently primary pulmonary lesion, then, is usually merely the manifestation of an infection of intestinal origin.

Experimental demonstration of the passage of bacilli across the healthy intestinal mucous membrane, and the course they follow to infect the lung and other organs. Chauveau first made this demonstration, and his results have been confirmed by numerous other workers. The experiments of Calmette and Guérin, confirmed by Herman, show that the best method of obtaining a result is to give the virus mixed with food. Destroying their animals (guinea-pigs, goats, and cattle) at various periods after the ingestion of the material, they were able to follow the course of the bacilli. In sucking animals the mesenteric glands were often the first to be infected by bacilli which had crossed the mucous membrane of the intestine without injuring it; for the lymphatic glands in young animals form a perfect filter. In older animals, in which the glandular structure is looser and more permeable, the bacilli pass the glands and then, englobed by leucocytes, gain the lung by way of the thoracic duct and the right side of the heart. There, arrested by the capillaries, they form foci of tuberculous infection.

Calmette, then, considers that in tuberculosis, whatever the original point of entry of the bacilli may be, invasion of the lung is always possible, and that the disease, in man and all susceptible animals, is almost always an infection primarily lymphatic and then sanguineous, which has absorption of the bacilli, by means of the digestive tract as its origin. —(*La Clinica Veterinaria*).

W. R. C.

OBSERVATIONS ON THE METHODS OF USING THE AGGLUTINATION TEST IN THE DIAGNOSIS OF DISEASE IN BOVINES CAUSED BY THE BACILLUS OF CONTAGIOUS ABORTION.

By. H. R. SEDDON, B.V.Sc.*
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Materials required on which to found a Diagnosis of Contagious Abortion.

The materials which may be examined are:—

- (1) Vaginal or Uterine Exudate after Parturition.
- (2) Fœtus or Fœtal membranes.
- (3) Blood serum.
- (4) Milk.

In animals which have recently aborted (1) and (2) are applicable, but in animals from which these were not secured, or in others in which it is desirable to diagnose infection in the absence of abortion, or at a time remote from the act of abortion, the most commonly used material is (3) Serum. This is of especial value because of its being easily obtained from cows at all stages of the disease from shortly after infection onwards; also from male animals, proving that they are susceptible to infection; and from laboratory animals, such as guinea-pigs. The drawback is the difficulty of obtaining the serum from a whole herd in the

country, where dairymen would have to collect the samples.

It was because of this difficulty that investigations have been made as to the possible use of (4) Milk. As far as I have been able to ascertain, this material, on account of its physical properties, has not been used to any extent for the agglutination test. In some respects milk itself is an unsatisfactory material, and for that reason whey, prepared by the artificial clotting of milk, has been used. Although these investigations are incomplete, they furnish evidence strongly suggesting that it will be found satisfactory for diagnosis. Should this be so, milk, from its ease of collection, would be the ideal material for examination in the case of lactating animals.

When whey has been used the agglutination test alone has been applied to it.

When using exudate (vaginal discharge containing uterine exudate), the means available in the hands of the bacteriologist are:—

(1) *Microscopical examination.*—To a person who is in the habit of frequently examining specimens containing the *bacillus abortus* the diagnosis presents no great difficulties, especially if the organisms are plentiful and typically arranged. On the other hand there are met with in vaginal or uterine material bacteria which simulate more or less the *B. abortus*, and here the other tests aid to confirm the diagnosis.

(2) *Cultures.*—For these to be satisfactory, the material should be as free as possible from contamination by other organisms. In Australia a cow is frequently at grass when abortion takes place, and may have aborted some days before the stockman sees her. The discharge in such cases is sure to be badly contaminated.

Also, the discharge should obviously not contain any antiseptic. It sometimes happens that one is called upon to examine material from a cow which has been syringed out with lysol, the specimen smelling strongly of the antiseptic. For these reasons this method is of very limited application.

(3) *Inoculation of Animals.*—The remarks made about contamination and antiseptics under the last heading apply equally here. Nevertheless, this method of diagnosis has been used here with success, guinea-pigs being used. Owing to the length of time before marked lesions develop one resorts to the agglutination test of the blood serum of the guinea-pig to determine whether infection by the specific organism has taken place.

(4) *Agglutination test.*—This has proved valuable in diagnosing a sample of exudate, in which the microscopical findings were doubtful, and where, on account of great contamination, cultures were not obtained.

It has been found very delicate, as little as 0.0025 c.c. of exudate causing agglutination. From one of these positive cases the blood serum, secured 16 days later than the exudate, and 17 days after abortion, gave an exactly similar agglutinating titre to the exudate.

Further, exudate may be kept until it is fairly swarming with bacteria, and yet show little loss of agglutinant action. Also exudate diluted with carbolic saline (10% of exudate in saline containing 0.5% of carbolic acid) shows little loss of agglutinating bodies.

Exudate from a healthy cow which calved at the Institute was tested, and even in an amount of 0.25 c.c., failed to give any agglutination.

(5) *Complement Fixation test.*—No opportunity has presented itself of applying this test to Exudate, but, judging from the results with the agglutination test on this material, there seems to be no reason why it should not be of use for diagnostic purposes.

[An opportunity has since presented itself of testing, by the Complement Fixation method, a sample of vaginal exudate from a cow which had recently aborted. The result was positive.]

* Reprinted from Proc. Roy. Soc. Victoria, Vol. XXVII. (New Series), Pt. II.

Technique Employed.

In the following pages details of the technique employed in the use of all the materials examined are given with a view to a standardisation of the test in the hands of different workers, so that the interpretation and comparison of results may be possible and accurate.

a.—The use of whey and the value of the method.

That the specific agglutinins of *Bacillus abortus* may occur in milk has been mentioned by M'Fadyean and Stockman, (1) in the Appendix to Part I. of the Departmental Committee's Report, page 28, where they say: "We also found that the milk of an animal which had aborted possessed agglutinating properties up to 1 in 25, but, owing to the opacity caused by the addition of milk to a culture, milk is unsuitable for testing purposes." Whether this product has been used at all in diagnosis I am not aware.

It is obvious that if milk, or milk products, could be used it would be advantageous, owing to the ease of securing specimens: but, as milk, even diluted, is unsatisfactory on account of its physical properties, experiments were made with whey. The whey was obtained by clotting milk with Lactic Acid, the technique being as follows:—

To 9 c.c. of milk, 1 c.c. of a 10 per cent. aqueous solution of lactic acid is added and mixed. The coagulated milk is then filtered through either cotton-wool and filter-paper, or filter-paper alone, the latter method being usually applied.

The whey is then diluted, one part to nine parts of carbolised saline (Acid. Carbol. liq. 0.5, Sod. chlor. 0.85, water 100), to form the basal dilution 1 in 10, and incubated over-night. Incubation and subsequent filtration are found necessary, otherwise there may be a deposit of albuminous material, which, though unlike the typical deposit of agglutinated organisms, is not desirable, since it may lead to confusion in reading the results.

With the diluted, incubated, and filtered whey, four tubes, each receiving 0.5 c.c. of standard bacterial emulsion, are put up, containing the following amounts of the basal dilution of whey (1 in 10).

	A.	B.	C.	D.
	1.0	0.2	0.1	0.05 c.c.
(representing	0.1	0.02	0.01	0.005 c.c. of pure whey).

As a control, 1 c.c. of diluted whey is put in a tube without any emulsion.

Carbolised saline is then added till the amount of liquid in each tube is approximately 1.5 c.c.

Thus the series of tubes contain:—

	A.	B.	C.	D.
Whey	0.1	0.02	0.01	0.005 c.c.
Emulsion	0.5	0.5	0.5	0.5 c.c.
Saline	0.9	0.98	0.99	0.995 c.c.

The tubes are then shaken and put in the incubator till next day, when the results are read. Further incubation shows little alteration, a tube showing "partial" agglutination—i.e., small deposit, with no "clearing" of the supernatant fluid at the end 18 to 24 hours, may be complete at the end of 36 to 48 hours.

Whey, from milk which had been kept 20 days at room temperature, and clotted naturally, has also been tested, when it was found that this bacterially-produced whey exhibited the same titre as the whole milk.

A large number of experiments with whey have been performed, but as yet no conclusion has been come to as regards the limiting titres upon which a diagnosis may be made. It has been found that the agglutinins in whey increase and decrease in much the same manner as they do in blood serum. The work to date has been chiefly among cows on a property where the disease has

been in existence for a number of years, but where the abortions, since the investigations commenced, have been very few—not sufficient to warrant a definite opinion as to the comparative value of whey versus serum. Sufficient has been done, however, to warrant investigation of the value of whey as a material for diagnosis by other workers.

b.—Collection of Serum from Cattle and Guinea-pigs. Occurrence of the Agglutinins in the Blood of Steers.

Cattle.—Undoubtedly the most satisfactory method of obtaining serum in large quantities is by bleeding from the jugular vein, but as this method takes some time, and often necessitates the casting of the animal, another and simpler method is preferable where only small quantities of blood, sufficient for diagnostic purposes, are required.

It has been found that such may be best obtained from the small artery which runs with the vein extending along the centre of the dorsum of the ear. This vein is the most prominent and is easily found. The hair is clipped off, and an incision is made across the vein and the artery at a point about mid-way between the tip and the base of the ear. The artery may not be cut at the first incision, as it usually lies underneath the vein, and a second rather free incision may be necessary. From this the blood spurts or drips freely, and 5 to 10 c.c. can be collected in a test-tube. The blood is allowed to clot, the clot loosened from the sides of the tube for about two-thirds of its attachment, and the tube inverted in a conical urine test-glass. After allowing this to stand for some hours, the serum may be collected free from corpuscles.

Guinea-pigs.—The following method has been found satisfactory for obtaining small quantities of serum for diagnostic purposes:—

Centrifuge tubes are put up, containing 2 c.c. of citrated carbol saline (Sod. chlor. 0.85, Sod. cit. 1, Ac. Carb. liq. 0.5, water 100). The margin of the ear of the guinea-pig is then incised with the scissors and held dependant. There is a small artery in this region from which, if it has been cut, the blood drips freely. Six drops of blood are collected in the prepared tubes. If we assume that six drops of blood are equal to 0.3 c.c., then we should have about 0.2 c.c. of serum in each tube, or a dilution of 1 in 10.

The tubes are shaken, centrifugalised, and the supernatant fluid pipetted off and tested in various quantities. Though not quite accurate, this method is sufficiently so for determining whether the animal is harbouring the bacilli, as, for example, those animals inoculated with vaginal exudate or milk from suspected cows. Healthy, non-inoculated guinea-pigs have invariably given a negative reaction, even with 0.1 c.c. of pure serum (i.e., 1 c.c. of the citrated saline mixture), whereas some of our reacting guinea-pigs have given an agglutinating titre of 0.005 c.c., and in one case of 0.0005 c.c.

Examination of the Blood of Steers.

Because of the large number of cows which give a positive agglutination reaction, it is important to determine whether agglutination of the contagious Abortion bacillus is brought about by normal ox serum, and, if at all, to what extent. With a view to obtaining information on this point, experiments have been conducted with the serum of male animals never used for breeding.

The following experiments have been made with the serum of steers. The animals were for human consumption, and the blood was taken, immediately upon slaughter at the abattoirs, into a bottle containing a small quantity of strong (20%) citrate solution. The serum was obtained by centrifugalising and tested as follows:—

Basal dilutions were made containing 1 of serum to 9

of carbolised saline; the amount of standardised emulsion used in each tube was 0.5 c.c. Results:

c.c. pure serum	0.1	0.06	0.04	0.02	0.01	0.005
Steer 1	—	—	—	—	—	—
2	—	—	—	—	—	—
3	—	—	—	—	—	—
4	—	—	—	—	—	—
5	++	—	—	++	++	+
6	—	—	—	—	—	—
7	+	S	—	—	—	—
8	—	—	—	—	—	—
10	S	S	—	—	—	—

++ Agglutination and clearing. + Agglutination.
S Slight agglutination. — No agglutination.

It will be seen that, with the exception of Steer No. 5, no animal gave a positive reaction with less than 0.1 c.c. of pure serum, and only one a definite agglutination with that amount. With regard to the "S" readings, as mentioned elsewhere, we do not count these as positives, as the amount of agglutination is extremely small—only perceptible on very careful naked eye examination.

The serum of the positive steer (5) was also tested by the complement fixation method, and again gave a positive reaction.

(c) Standardisation of the Bacterial Emulsion.

In the description of the technique adopted by other workers there is a remarkable absence of detail as to the concentration of the bacterial emulsion.

Although Mohler and Traum (2) use a method of standardising bacterial emulsion ("agglutinating fluid"), they do so by comparing it with "the old titred agglutinating fluid," but how this "old agglutinating fluid" itself was standardised they do not say, nor do they indicate what it was like in appearance.

M'Fadyean and Stockman (3) prepare "an emulsion of greater turbidity than is ultimately required," and dilute it "until when viewed in one of the small tubes employed for the tests it is faintly hazy in appearance."

In this laboratory a method based upon comparison of the emulsion to be employed with a suspension of Barium sulphate has been used, the idea being suggested by the "Nephelometer" of McFarland (4).

For the test the following solutions are made:—A 1% solution of Barium chloride in distilled water, and a 1% solution of Sulphuric acid in water. Three cubic centimetres of Barium solution is then mixed with 97 cubic centimetres of the acid solution, shaken, and allowed to stand, to come to a state of chemical equilibrium.

The *B. abortus* is sown on agar in Roux flasks and incubated for two or three days, the water of condensation being run over the surface daily so as to get a good growth over the whole surface. Twenty cubic centimetres of carbolised saline (Ac. Carb. liq. 0.5, Sod. chlor. 0.85, water 100) is then added to the flasks and the growth washed off, shaken thoroughly, and passed twice through filter-paper. Dilutions of this suspension, or "emulsion," as it is generally called, are then made with carbolised saline as follows:—1 c.c. of emulsion and 1 c.c. of carbolised solution; 1 c.c. of emulsion and 2 c.c. of carbolised saline; and so on up to 1 c.c. of emulsion and 10 c.c. of carbol saline. These suspensions are the fluids to be compared with the Barium sulphate mixture.

To compare, the Barium sulphate mixture is thoroughly shaken, and a small tube of about 1 cm. calibre filled with the fluid, the fluids to be tested being placed in similarly sized tubes and comparisons made over printed paper. This Barium suspension is our standard of opacity for emulsion (Standard X).

Supposing the tube which approximates the opacity of the Barium mixture is that tube which contains 1 c.c. of thick emulsion and 6 c.c. of carbolised saline, then this tube is of the proper standard, and is called "Stan-

dard X." The whole of the emulsion may then be diluted down with carbolised saline to the proper strength, or kept as thick emulsion, the standard being now known. In the case instanced, the thick emulsion may be termed "7 X," thereby denoting that it requires diluting to seven times its volume—i.e., adding six times its volume of carbolised saline, to prepare a standardised emulsion "X."

In our tests, in which we make the total volume of fluid in the tube up to 1.5 c.c., we use 0.5 c.c. of this standard emulsion "X" in each tube.

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3. M'Fadyean and Stockman (1912). Journal of Comparative Pathology and Therapeutics, Vol. XXV., 1912, pp. 22-29.
4. McFarland, Journal American Medical Association, Vol. 49, p. 1176. Extracted in Bulletin de L'Institut Pasteur, Vol. 6, 1908, p. 123.
5. Hewlett (1914). Manual of Bacteriology, 5th Edition, p. 188.

To be concluded.

ON THE USE OF CERTAIN ANTISEPTIC SUBSTANCES IN THE TREATMENT OF INFECTED WOUNDS.*

By H. D. DAKIN, D.Sc., F.I.C., The Herter Laboratory, New York.

[A previous extract on this subject appeared in our issue of August 21st. As some members of the veterinary profession are strongly of opinion that this antiseptic will be of material assistance to the veterinary profession, we reprint the essential portion of a further paper which appears in the *Brit. Med. Journal* of August 28th].

"The germicidal activity of all known antiseptics is greatly reduced by the presence of blood serum or similar substances, and in some cases this reduction is so great that the compound loses all practical antiseptic value.

The following table contains results which illustrate this enormous reduction in germicidal action by blood serum in the case of several common antiseptics. I am greatly indebted to my colleague, Dr. Maurice Daufresne, for all the bacteriological results referred to in this communication.

The figures indicate the concentration of antiseptic necessary to sterilize one drop of a fresh culture of *Staphylococcus aureus* in a total volume of 5 c.cm. acting for two hours. + indicates growth; — indicates complete sterilization.

But in choosing a suitable antiseptic many other factors than germicidal action need to be considered. Mercuric chloride, which among the substances referred to in the table shows the highest germicidal action, is probably the least useful and most objectionable as an antiseptic for the treatment of infected wounds. It may be of use to consider some of the limitations of

* The work described in this communication was carried out in laboratories at Compiègne supported by the Rockefeller Institute for Medical Research attached to Hospital 21 of the French army. For cordial co-operation in the preparation of a large number of chloramines and other substances, upon which a detailed report will be published later, I am indebted to my former teacher, Professor J. B. Cohen, F.R.S., of the University of Leeds, and to Dr. J. Kenyon, who was appointed by the British Medical Research Committee.

the commonly used substances referred to in the table.

Antiseptic.	Without Blood Serum.	With Blood Serum.
Phenol	1 : 250 - 1 : 500 +	1 : 50 - 1 : 100 +
Salicylic Acid	1 : 2,500 - 1 : 5,000 +	1 : 100 - 1 : 250 +
Hydrogen peroxide	1 : 3,500 - 1 : 8,000 +	1 : 1,700 - 1 : 2,000 +
Iodine	1 : 100,000 - 1 : 1,000,000 +	1 : 1,000 - 1 : 2,500 +
Mercurial chloride	1 : 5,000,000 - 1 : 10,000,000 +	1 : 25,000 - 1 : 50,000 +
Silver nitrate	1 : 1,000,000 - 1 : 10,000,000 +	1 : 10,000 - 1 : 25,000 +
Sodium hypochlorite	1 : 500,000 - 1 : 1,000,000 +	1 : 1,500 - 1 : 2,000 +
Benzene sodium sulphochloramide	1 : 500,000 - 1 : 1,000,000 +	1 : 1,000 - 1 : 2,000 +
Paratoluene sodium sulphochloramide	1 : 750,000 - 1 : 1,500,000 +	1 : 2,000 - 1 : 3,000 +
Acetylchloraminodichlorbenzene	1 : 500,000 - 1 : 1,000,000 +	1 : 2,500 - 1 : 5,000 +

Phenol is characterised by very low germicidal power, especially when acting in the presence of serum. When used in sufficiently high concentration for germicidal efficiency it is decidedly destructive of healthy tissue.

Hydrogen peroxide gives encouraging results when tested against bacteria in the test tube, but when used on wounds the substance has little germicidal action, for it is decomposed with the greatest ease by the enzyme catalase present in all tissues and in the blood cells. Hence its action can only be exerted during a trifling interval of time. The mechanical detergent action connected with the rapid disengagement of oxygen gas on infected surfaces is probably of greater value than any antiseptic action exerted by the hydrogen peroxide.

An interesting experiment related to me by Professor E. K. Dunham may be quoted here. A rabbit which had received an intravenous injection of the Welch bacillus (*B. aerogenes capsulatus* or *B. perfringens*) was killed, and the infected liver was removed and carefully sectioned. It was found that cubes of the infected liver only 1 mm. in size could be immersed in and incubated with hydrogen peroxide of moderate concentration without destruction of the micro-organisms.

Hydrogen peroxide, as regards its antiseptic action, must be regarded as of slight value, even against anaerobic organisms.

Mercuric chloride readily loses most of its antiseptic action in presence of many tissue constituents, and, as is well known, is irritating even in dilute solution. It is useless for the sterilization of pus when employed at any reasonable concentration.

Silver nitrate is of greater value than mercuric chloride, but when used in sufficiently high concentration is irritating. Many tissue constituents inhibit its action markedly. The photo-sensitiveness of the silver compounds formed is objectionable.

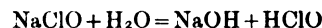
Iodine, which has proved so valuable for the disinfection of skin, has given much less satisfactory results when used for deep wounds owing to protein coagulation and irritation of the tissues. The penetrating power of iodine is slight, and wounds which have been freely treated with it are apt to cicatrize more slowly than others.

Sodium hypochlorite has high germicidal action, and has many other desirable properties. But sodium hypochlorite as ordinarily prepared is of extremely variable composition, contains free alkali and sometimes free chlorine, and is consequently irritating when applied

to wounds. By a simple process, which will now be described, it has been possible to render the hypochlorites much less irritating while retaining their antiseptic action unchanged.

PRINCIPLES INVOLVED IN THE PREPARATION OF THE HYPOCHLORITE SOLUTION.

Solutions of sodium hypochlorite always contain free alkali even when prepared with the greatest care. A so-called "neutral" solution of sodium hypochlorite has an alkaline reaction. This is due not only to free alkali which may remain from the process of preparation, but also to the fact that the hypochlorite in solution undergoes hydrolytic dissociation giving free sodium hydroxide and hypochlorous acid.



The extent of this dissociation has been measured by Duyk and quantitatively it is very considerable. The irritating action of ordinary hypochlorites is largely due to this formation of free alkali. The extent of this hydrolytic dissociation increases with dilution, so that practically hypochlorites cannot be effectively rendered non irritating by simply reducing the concentration, for a point is soon reached at which germicidal action is impaired while the irritating properties of the solution persist. In addition to the above sources of free alkali, it must not be forgotten that alkali may be liberated by the action of sodium hypochlorite on proteins, a reaction in which the chlorine of the hypochlorite is attached to nitrogen in the proteins, as will be shown later.

Now it is well known that certain fluids, such as blood and some other body fluids, also contain artificial salt solutions containing mixture of salts of polybasic acids—for example, phosphoric acid—are able to retain their essential neutrality even after the addition of limited quantities of acid or alkali. This is due to the fact that the addition of acid or alkali simply changes the relative proportion of two or more salts of the polybasic acid present in the solution.

Starting with this idea, and employing the feeble polybasic acid, boric acid, it has been possible to prepare a simple hypochlorite mixture which maintains approximate neutrality under all conditions, is practically non-irritating, and which, when properly applied has given most encouraging results in the antiseptic treatment of wounds. It must be understood that the insignificant antiseptic action of boric acid has nothing to do with the employment of this acid; nor is the boric acid employed for the purpose of liberating hypochlorous acid, as in Lumière's or Lorrain Smith's preparations.

The principle of the preparation is as follows: Chloride of lime (bleaching powder) is decomposed with a solution of sodium carbonate and the filtered solution containing sodium hypochlorite together with a slight excess of alkali is mixed with boric acid in such quantity that the solution is acid to phenolphthalein suspended in water, but still alkaline to litmus. The resultant solution contains a balanced mixture of hypochlorite and polyborates of sodium with small amounts of free hypochlorous and boric acids. Thus the irritating action of free caustic alkali is avoided, for even if momentarily formed it would be at once neutralised by the boric acid or acid borates present in the solution.

Preparation of Solutions.

"The preparation of a solution of suitable concentration for direct application, containing 0.5 to 0.6 per cent. of sodium hypochlorite, may be carried out very simply as follows:—

One hundred and forty grams of dry sodium carbonate (Na_2CO_3), or 400 grams of the crystallized salt (washing soda), is dissolved in 10 litres of tap water, and 200 grams of chloride of lime (chlorinated lime) of good quality is added. The mixture is well shaken, and, after

half an hour the clear liquid is siphoned off from the precipitate of calcium carbonate and filtered through a plug of cotton; 40 grams of boric acid are added to the clear filtrate, and the resulting solution is ready for use. A slight additional precipitate of calcium salts may slowly occur, but it is of no significance. The solution should not be kept longer than one week. *The boric acid must not be added to the mixture before filtering, but afterwards.*

A stronger solution may be prepared by decomposing chloride of lime with sodium carbonate in the proportion of 150 grams of the former to 105 grams of the latter dissolved in a litre of water. The mixture is filtered and a measured portion of it (20 c.cm.) is rapidly titrated with a boric acid solution of known strength (31 grams per litre), using phenolphthalein suspended in water as indicator, in order to determine the amount of solid boric acid to be added to the rest of the filtrate. An excess of boric acid should be avoided, so that it is best to add slightly less than the calculated amount. An ordinary alcoholic solution of phenolphthalein cannot be used as indicator, as the alcohol is at once attacked.

The concentrated solution thus prepared contains about 4 per cent. of sodium hypochlorite, and should be mixed with six parts of water before use. It can be kept for a month without serious decomposition. Such a solution can easily be made at a negligible cost by any competent chemist, and I hope it may be so made generally.

APPLICATION AND RESULTS.

"To obtain the best results it is essential to commence the antiseptic treatment of the wound at the earliest moment possible, and to bring fresh quantities of the antiseptic solution in contact with all parts of the wound as frequently as possible for a considerable period of time. This is naturally a difficult problem, requiring different methods for various types of wound. To give some idea of the quantities of solution employed it may be mentioned that 5 to 10 c.cm. may be introduced every two hours by means of rubber tubes into small wounds, using a pipette or syringe, while for the irrigation of wounds accompanied by much destruction of tissue, as much as one, or even two, litres may be employed. The dilute solution, prepared as described, may be used in large quantities for the continued irrigation or instillation of wounds for more than a week without producing visible irritation. It is extremely rare for slight irritation of the skin to occur, and this may be guarded against by the application of vaseline to the skin adjacent to the wound. As a wet dressing the solution may be used almost indefinitely. A few comparative tests on similar surface wounds do not indicate that cicatrization is delayed, even by its continued use."

The solution has the valuable property of assisting in the rapid dissolution of necrosed tissue, this being doubtless due to the ability of hypochlorites to attack the (NH) groups present in proteins with formation of soluble products. It has a certain hæmo static action as well, but is actively hæmolytic and should not be injected intravenously.

Methylene Blue for Contagious Abortion.

The following is quoted by *Farm and Home*:-

A circular letter has been issued by Professor Rich, of the Vermont Experiment Station, concerning the method of controlling contagious abortion by the use of medicinal methylene blue which he originated and has had good success with. He says:-"My treatment for infectious abortion in cows as administered at present consists in giving each cow half an ounce of medicinal methylene blue, on silage, once a day for four or five weeks. After calving, the treatment is resumed for a few days; and within a few hours after freshening, preferably immediately after expulsion of the afterbirth,

the cow's uterus is washed out with a methylene blue solution, consisting of half an ounce of the blue and an ounce of table salt to the gallon of boiling water. The solution is cooled to about 105° F., and strict aseptic precautions are observed in its introduction into the cow's uterus. The stables are thoroughly cleaned and disinfected and the disinfection is repeated after each occurrence of abortion therein. The calving pen is cleaned and sprayed with mercuric chloride solution, each time after occupation; and on the return of each fresh cow to her stanchion, the platform and trench behind her are sprinkled daily with 1 to 1000 mercuric chloride solution for at least ten days. The afterbirth is burned or deeply buried, and the calf and soiled hind parts of the cow are carefully sponged with warm 1 per cent. lysol solution. The sheath of the bull is washed with a 1 per cent. lysol solution, and either this or the above described methylene blue solution is injected into it."

Hypochlorous Acid as an Antiseptic.

Under the heading "A New Antiseptic," in the daily papers recently it was announced that a communication had been made to the Academy of Science in Paris referring to the discovery of a new antiseptic for the treatment of wounds. Some accounts stated that the new antiseptic was chlorinated lime (calcium hypochlorite), to which boric acid had been added, and subsequently chalk to neutralise the acidity of the mixture. Later it was stated that the new antiseptic was prepared by adding to a solution of sodium hypochlorite boric acid until the mixture was neutral. In both cases it seems fairly obvious that the net result would be a solution of hypochlorous acid, a well-known and powerful antiseptic, probably more efficacious than chlorine itself.

But the claims to novelty for this antiseptic are ill-founded. It is a good many years since we announced from *The Lancet* laboratory that the activity of ordinary bleaching powder was greatly increased by passing through it carbonic acid gas which liberates hypochlorous acid. Any other acid—e.g., boric acid—will do the same thing. In 1894 we investigated the Hermite process for the sterilisation of sewage, which consisted in passing a current of electricity through sea-water, which was demonstrated to produce hypochlorous acid. The germicidal power of this electrolytic fluid was shown to be more than equal to corrosive sublimate; it was found to possess the advantage that it did not become inert by forming insoluble compounds with albumins, while it could be very cheaply produced. We pointed out at the same time that a practically identical fluid, except for an excess of common salt, could be produced by passing carbonic acid gas through a solution of bleaching powder. Later it was found that by adding bicarbonate of soda in excess to bleaching powder solution a fluid was obtained containing free hypochlorous acid, although the product possessed acid-neutralising properties due to the excess of bicarbonate of soda present.—*The Lancet*.

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Sept. 17.

REGULAR FORCES. ARMY VETERINARY CORPS.

Lt. P. S. Sparling, from S.R., to be Lieut.; Temp. Lt.

S. L. Symonds to be temp. Capt. Dated Sept. 18.

To be temp. Lieuts:—

J. H. Crawford. Dated Aug. 25.

A. Hart. Dated Sept. 3.

V. R. de Boissiere. Dated Sept. 6.

Sept. 18.
Temp. Lieut. E. A. Wilshaw relinquishes his commn. on termination of engagement. Dated Sept. 7.
To be temp. Lieut. :—J. C. Collings. Dated Sept. 7.

Sept. 20.
Lt. H. Chown, from S.R., to be Lieut. Dated Sept. 21.
Temp. Lt. W. Scott to be temp. Capt. Dated Sept. 6.

Sept. 21.
Temp. Capt. F. C. Gavin to be temp. major, while holding appmt. of Asst. Dir. Vet. Serv. Dated Aug. 11.
Temp. Lieut. L. S. Sedgwick relinquishes his commn. on ceasing to be employed. Dated Sept. 4.

Sept. 22.
To be temp. Lieut. :—W. F. Wright. Dated Sept. 9.

The following casualties in the Expeditionary Force, which occurred during April and May, are reported :—

WOUNDED—Sgt. H. Drury, 19 ; Ptes. H. Earle, 91 ; R. Howards, 2027 ; H. Newstead, 1428 ; C. Stansfield, 3891 ; O. Stroud, 1683 ; Shoesmith A. Weston, 2006.

Personal.

Capt. F. J. TAYLOR, A.V.C. (T.F.), is now in Campbell Hospital, 10 Cambridge Square, Hyde Park. He was invalided from Egypt, owing to a horse accident, and in consequence has undergone an operation, which has been successfully performed by Col. Battle.

Capt. Taylor has had a varied experience. On mobilization he was serving with 5th London R.F.A. on Salisbury Plain. He was then transferred to Headquarters Staff, 2nd London Division, Chelsea Barracks, and moved with the Division to St. Albans, where he took command of the Divisional Veterinary Hospital, establishing and equipping it, and obtaining recruits for the section. Next he was transferred as O.C., "C" Mobile Veterinary Section, 2nd Mounted Division, which was then in Norfolk and under orders for France, but, owing to the threatened air raid, these orders were cancelled, and at the end of March they proceeded to Egypt, and served as a Cavalry division in Cairo, Alexandria, and Suez Canal. He says: "We saw quite a lot of the Turks in their several attempts to attack the Canal defences. I was fortunately attached to the London Mounted Brigade, comprising Middlesex, City of London, and 3rd County of London Yeomanry—a splendid lot of men, who have given more than a good account of themselves in that hellish campaign on the Peninsula, and, although dismounted, have gloriously upheld the honour of the 4th Brigade. It is my only regret in life that I was prevented from being with them."

HARRISON—SMALL. At the Parish Church, Herne, Kent, on Monday, Sept. 20th, G. A. Harrison, M.R.C.V.S., son of the late Mr. Benjamin Harrison and Mrs. Harrison, Wemley Bank, Thornbury, Bradford, Yorks, to E. N. (Nellie) Small, of Harrogate.

The marriage of Capt. T. A. BLAKE, M.R.C.V.S., of the Dept. of Agric. New Zealand, was announced recently at Cairo.

TREATMENT OF NEMATODE DISEASES.

I was much interested in the article by Prof. Craig, "The use of Drugs in the Treatment of Diseases caused by Nematode Worms," which was presented at the Tenth International Veterinary Congress, London, 1914, and published in your paper of August 21st. About 18 months ago I had a three-year-old colt, bred by myself, which was literally dying by being affected with worms. It was some time, and after a good many attempts, before I found them, little red things, about a $\frac{1}{4}$ -inch long; Sclerostoma Tetracantha, and also the longer ones, the Sclerostoma Armata.

At Veterinary meetings I used to suck everyone's brains as to what treatment to adopt, but without much success. I thought seriously of destroying the colt, as after being out at grass in a good field all May and June, 1914, he did not improve at all; but before doing so I decided to write to the Veterinary papers and ask if any Veterinary Surgeon could advise me on a successful treatment.

Mr. John Brown, of Invergordon, kindly replied, and suggested that I should try Atoxyl, and referred me to an article which I had not seen, on the results of cases treated with Atoxyl.

Accordingly, I took up the colt from off grass, and gave him two subcutaneous injections a day of Atoxyl. I regret I cannot remember the dose I started with, but doubled the dose every week up to the end of the fourth week.

I also gave 40 grains of Thymol three times a day in a pint of milk. At the end of a month the colt had improved out of all recognition.

On War being declared in August, 1914, I sent my colt to the Royal Veterinary College, Camden Town, where Prof. Woodriddle kindly continued the treatment for me, but continued the dose of Atoxyl as it was at the end of the fourth week.

The colt kept on improving, and after a month Prof. Woodriddle, after having several times searched for the worms without any success, sent the colt to my home, where he was turned out in different pastures.

When I saw the colt again in December, on my first leave home, he looked in excellent condition, and had filled out enormously. The colt kept in excellent condition and got quite fat, but he never grew after he was $2\frac{1}{2}$ years old, and was only 15-1.

I sold him at Tattersall's last July, a four-year-old, unbroken, for fifty guineas. The treatment cost me about £12, but it was well worth it, both from a financial and an instructive point of view.

A doctor told me that in Egypt he had often given men half-drachm of Thymol, so perhaps our dose for horses is far too small. I might add that the price of Atoxyl is £1 an ounce, and Thymol 3/- an ounce.

GRAHAM REES-MOGG, F.R.C.V.S.

32nd Division, Codford,
21st Sept.

VALIDITY OF AGREEMENTS—A QUESTION.

Sir,—I should be glad to know if the usual agreement with a veterinary assistant (not to practise in a district for a fixed time) properly drawn up, signed, and stamped, is still considered legal. Possibly some of your readers can tell.

I think it a question that concerns the whole profession.
Yours truly, PRO BONO PUBLICO.

In view of the need for husbanding the food supply of the country, the Board of Agriculture and Fisheries decided last August that the slaughter of pigs for the purpose merely of reducing the risk of the spread of swine fever should be resorted to as little as possible, and that the slaughter of breeding sows or partially matured animals purely as a matter of precaution should be avoided. The Board has therefore relied on isolation combined with the slaughter of all swine distinctly sick of Swine Fever at the time of diagnosis.

Meanwhile, investigations into the efficacy of the injection of Anti-Swine-Fever serum which were being carried out before the war began have been continued, and the results obtained, together with the evidence accumulated as to its use in other countries, show that if proper precautions are taken immunity from Swine Fever can be established by serum treatment.

The Board are now in a position to offer serum treatment of pigs free of cost, in the early stages of an outbreak of Swine Fever; and they wish to impress on all owners that to obtain the best results from this treatment notification of the suspected existence of Swine Fever on their premises should be made at the earliest possible date. Any delay in notifying not only renders the owner liable to prosecution for failing to comply with the provisions of Article 1 (1) of the Swine Fever Order of 1908, but also tends to increase his loss, owing to more pigs becoming affected before serum treatment is carried out.

Board of Agriculture and Fisheries,
4 Whitehall Place, London, S.W.
18th September, 1915.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaugh-tered.*
	(a)		(a)		(b)		(b)			(a)	
Gr. BRITAIN.											
Week ended September 18	3	3				1	15	28	1	43	99
Corresponding week in											
1914 ...	10	12			1	1				103	470
1913 ...	12	14			3	3	17	25	1	46	543
1912 ...	6	8	1	26	1	1	22	36		28	472
Total for 38 weeks, 1915	436	497			36	66	‡620	‡1339	162	3136	13802
Corresponding period in											
1914 ...	548	600	22	108	79	232	1526	2638	155	3063	30470
1913 ...	402	444			121	298	1976	3958	133	1836	24377
1912 ...	589	670	78	589	135	248	2403	5175	175	2318	30552

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked : Stafford 1.

Board of Agriculture and Fisheries, September 21, 1915

‡ Figures for twenty-five weeks only.

IRELAND.	Week ended Sept. 18	...	...	...	...	...	Outbreaks 1	2	5	25
Corresponding Week in {	1914 ...	...	...	...	...	...	2	3	1	5
	1913 ...	...	...	...	...	...	...	7	...	...
	1912 ...	...	...	1	1	...	...	1	3	9
Total for 38 weeks, 1915		...	1	1	1	3	57	307	191	1057
Corresponding period in {	1914 ...	1	1	76	957	67	400	161	841	
	1913	102	390	113	693	
	1912 ...	3	3	28	261	53	265	183	1503	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Sept. 20, 1915
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

Veterinary Societies—Addresses.

BORDER COUNTIES V.M.S.

Pres: Mr. H. Barrow, M.R.C.V.S., Ireby, Carlisle
Hon. Sec: Mr. R. Craig Robinson, M.R.C.V.S., Carlisle
Meetings, Second Friday of Feb., June, and October

GLASGOW V.M.S.

Pres. Principal McCall.
Hon. Sec. Mr. J. D. Fulton, 83 Buccleuch Street, Glasgow

ROYAL VETERINARY COLLEGE V.M.A.

Pres: Prof. E. Brayley Reynolds.
Hon. Sec: Mr. B. Gorton, M.R.C.V.S. Assist. Mr. P. R. Turney

ASSOCIATION OF VETERINARY OFFICERS OF HEALTH

Pres: Mr. T. Douglas, M.R.C.V.S., Kilmarnock
Hon. Sec. & Treas. Mr. A. M. Trotter, M.R.C.V.S.,
Moore Street, Abattoir, Glasgow

NATIONAL ASSOCIATION OF VETERINARY INSPECTORS

Pres: Mr. J. Abson, F.R.C.V.S., Sheffield
Hon. Sec: Mr. Trevor Spencer, M.R.C.V.S., Kettering

MUNSTER VETERINARY INSPECTORS' ASSOCIATION

Pres: Mr. D. M. Barry, M.R.C.V.S., Mallow
Hon. Sec: Ma. T. I. Alexander, M.R.C.V.S., Kinsall

NATIONAL VETERINARY BENEVOLENT & MUTUAL DEFENCE SOCIETY.

Pres: Mr. W. A. Taylor, F.R.C.V.S., Brick-st, Manchester
Hon. Sec: Mr. G. H. Locke, M.R.C.V.S.,
Grosvenor Street, Oxford-st., Manchester
Treas: Mr. J. B. Wolstenholme, F.R.C.V.S.,
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URINE TESTING.

The Continental note on this subject which we print to-day is of interest in one respect—it refers to a diagnostic method which, though universally admitted to be very important, is as yet practically unused by English clinicians. Nearly all medical men test urine very frequently, as a routine diagnostic measure. Very few veterinary practitioners ever test it at all. Of course, there are obvious difficulties in the way of testing the urine of veterinary patients; and probably these account for the fact that it is practically never done. Though the difficulties are insurmountable in some cases, they could certainly be overcome in many others; and we should endeavour to bring urine testing into routine veterinary diagnosis. So much information may be gained from it, especially perhaps in canine practice, that our continued neglect of it is a reproach to the profession.

THE SOCIETIES.

Most of our professional associations continue to meet; but so many members are away that the Secretaries must have even more than the usual difficulty in finding papers for discussion. In addition, the range of subjects likely to produce good discussions is narrower just now than usual. Veterinary politics are stagnant; and there is not much doing in the way of preventive medicine.

Before very long, it is true, some country members will have had sufficient experience of the serum treatment for swine fever to permit a profitable comparison of notes; but that time has not yet arrived. In the meantime, essayists can fall back upon the everyday clinical subjects which, after all, form the chief interest of the working practitioner's life, and the main source of his livelihood. Here they have ample material, both as regards amount and variety. There are many already oft-discussed subjects which could advantageously be re-discussed; there are others which have so far been discussed little, or perhaps hardly at all. There is no difficulty in finding subjects for discussion; the difficulty is to find members willing to introduce the subjects, and this will be accentuated now that so many of the younger men are away. Here is a chance for some of those numerous members who have never yet given their colleagues the benefit of their professional experience. Every man who spends his life in practice has experience which could produce many papers worthy of discussion.

TREATMENT OF NEMATODE DISEASES.

May I be allowed to add a few remarks on Mr. Gaiger's most interesting criticism of Prof. Craig's paper on the above subject.

On examining the blood of camels for *T. Evansi* I several times found filarial embryos in apparently healthy animals, and they appeared to exert very little influence on condition.

Regarding "prickly heat" in horses, I have seen some cases show rapid recovery after a single dose of Soamin injected intramuscularly, but, on the other hand, I have had some cases which showed no improvement whatever.

I quite agree with Mr. Gaiger's refutation of Mr. Place's statement that bursati is a form of cutaneous filariases. I had considerable experience of this disease in a station where its prevalence was as great as, if not greater than, anywhere else in India, and never once found the filarial embryos described by Lingard.

The disease used to make its appearance regularly, shortly after the commencement of the monsoon, when flies were most prevalent. Excepting wounds, which, of course, could be on any part of the body, the parts affected in order of frequency were: (1) the angle of the mouth and the lips; (2) the eye; and (3) the urethral projection of the penis, and more rarely the anus and vulva.

Now, if one went round a stable at this time of the year, these parts are almost invariably covered with flies; especially is this the case regarding the mouth after feeding, for the lips are covered with bran, and a small collection is generally seen in the angle of the mouth. This being so one naturally associates the fly with the disease. Mr. Gaiger says flies have no connection with bursati, and that it is probably due to inoculation. I quite agree with the latter remark, but I think the inoculator may prove to be the fly.

T. LISHMAN, Capt. A.V.C.

"ON THE USE OF CERTAIN ANTISEPTIC SUBSTANCES IN THE TREATMENT OF INFECTED WOUNDS."

By W. R. DAVIS, Enfield.

In a paper with the above title, extracts from which are reprinted in *The Record* of Sept. 25, occurs the following:—

"Mercuric chloride is probably the least useful and most objectionable as an antiseptic for the treatment of infected wounds—readily loses most

of its antiseptic action in presence of many tissue constituents and, as is well known, is irritating even in dilute solution."

Thus do we lose our illusions. For the past thirty years I have relied on this chemical in the treatment of wounds in the larger domesticated animals, and have learnt to put the greatest confidence in it. I have never had a case of tetanus but once during all that time in animals that I have been called on to treat for wounds (the exception was a case of very severe broken knees, both limbs affected and numerous pockets formed). I have not only used it for my patients, but I have applied it to my own not infrequent wounds, contusions, bites and scratches, so that I am in a position to affirm that whether its antiseptic properties when applied to wounds are small or great, Mercuric chloride in dilute solution is certainly not irritant.

A fortnight ago I received several painful contusions in the right knee in a motor bicycle accident. I had a bottle of solution of perchloride 1:500 with me, and I soaked a pocket handkerchief with this, fastened it round the knee, and left it on all day. I certainly felt no irritation from the compress, rather felt the greatest comfort from its presence.

I must say that I experienced a sense of almost personal affront in reading about the alleged shortcomings of my old favourite. It will take more than test tube experiences to make me give up the use of Hyd. perchlor. in the treatment of wounds.

maximum limit. For the clinical demonstration of albumen the use of one method is insufficient; two or three must be employed. The most useful tests for the dog's urine are the Salicyl-sulphonic acid test, the heat test with the addition of nitric acid, and Heller's test. The potassium ferro-cyanide test is not reliable.

Bile pigments are to be met with in the most different diseased conditions. Gmelin's test suffices for their demonstration. Rosin's test is unsuitable for the dog's urine.

Eleven years' statistics of the Berlin clinique show that out of 107,111 canine cases—partly internal and partly external affections—only 26 cases of diabetes mellitus were found. The proportion of diabetic cases was thus less than 1 in 4000.

Increased indican-content of the urine occurs in intestinal affections of the most different character.

Leucocytes in small numbers are almost constant constituents of the urinary sediment; and they only become significant when they appear in larger quantities. Vesical epithelium and renal cells occur not rarely; and, when in small quantities, they indicate neither cystitis nor nephritis. Hyaline and slightly granular cylinders are frequent constituents of the normal canine urine; and so are spermatozoa. Micro-organisms in freshly voided urine indicate diseases of the urinary passages.

Crystals of triple phosphate, when they occur in fresh urine, should arouse the suspicion of a nephritis. Oxalate crystals have no special significance.—(*Berliner Tier. Woch.*)

W. R. C.

ABSTRACTS FROM FOREIGN JOURNALS.

RESEARCHES UPON THE PHYSICAL, CHEMICAL, AND MICROSCOPICAL PROPERTIES OF THE DOG'S URINE IN HEALTH AND DISEASE.

L. Lüth has published the following results of researches into this subject.

The colour of the normal canine urine is light yellow, golden yellow, or brownish yellow. In nephritis the colour is pale yellow, in cystitis light yellow, in distemper light yellow to brownish yellow; and when increased quantities of bile pigment and indican are present, the colour is brownish yellow. The transparency of the urine is impaired in cystitis and nephritis, and generally also in distemper. A thick consistence is rare. Normal dog's urine has an unpleasant broth-like smell; severe cystitis causes an ammoniacal pungent smell. Different drugs impart a special smell to the urine—sometimes sweetish, sometimes aromatic.

The specific gravity ranges from 1005 to 1050. It is low when diuretics are administered, high in feverish conditions. Albuminuria and the presence of bile pigments or indican do not alter the specific gravity. The normal acid reaction becomes alkaline in many diseases.

Physiological albuminuria amounts to rather less than 0.01%, and 0.2% should be regarded as its

OBSERVATIONS ON THE METHODS OF USING THE AGGLUTINATION TEST IN THE DIAGNOSIS OF DISEASE IN BOVINES CAUSED BY THE BACILLUS OF CONTAGIOUS ABORTION.

By. H. R. SEDDON, B.V.SC.

(Veterinary Research Institute, Univ. of Melbourne).

(Concluded from p. 141.)

Quantitative Factors in the Agglutination Reaction.

An unfortunate terminology has crept into descriptions of agglutination methods—probably a relic from the descriptions of the so-called Widal reactions with serum of typhoid patients—in which frequent use is made of the term "dilution," to express the amounts of serum (or other diagnostic fluid) necessary to bring about agglutination.

The following experiments show that the sensitiveness of the reaction is to be measured by accurate determination of the minimal quantity of serum employed; in other words, it is not simply a matter of dilution, but a quantitative reaction.

Experiments.—To determine whether—(1) The relation of the quantity of pure serum to the quantity of fluid in a tube (i.e., degree of dilution), or (2) The amount of pure serum in the tube, is the determining factor in agglutination of a particular serum.

Serum collected from a cow thirteen days previously was used, a basal dilution of 1 of serum to 49 of carbolic saline being made (1 in 50).

The emulsion was standardised in accordance with the usual method, and found to be of a standard "10 X."

Set 1a.—Ten tubes were put up, as follows :—

	A	B	C	D	E	F	G	H	J	K
Serum (1 in 50)	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.25 c.c.
Carbolised saline	0.0	0.5	1.0	1.5	2.0	1.25	1.5	2.0	2.5	1.75 c.c.
Total volume	1.0	1.5	2.0	2.5	3.0	1.75	2.0	2.5	3.0	2.0 c.c.
Relationship of serum to fluid	1 in 50	75	100	125	150	175	200	250	300	400

Of each of these dilutions 1 c.c. was put in a tube, and the tubes similarly lettered, so that the amounts of pure serum in these tubes were :—

A	B	C	D	E	F	G	H	J	K
0.02	0.012	0.01	0.008	0.006	0.0056	0.005	0.004	0.003	0.0025 c.c.

Emulsion (0.05 c.c., Standard 10 X) was then added to each tube and the tubes incubated till next day, when readings were taken.

Results :—A, B, and C, agglutination and clearing. D and E, agglutination. F, slight agglutination. G, H, J, and K, no agglutination.

Set 1b.—Another ten tubes were put up similarly to above (Set 1a), but with 0.1 c.c. of emulsion (i.e., double quantity) added.

Results :—A, agglutination and clearing. No agglutination in other tubes. Note.—In these two sets of tubes actual dilution of serum in total fluid (neglecting the small amount added with the emulsion) was the outstanding test.

Set 2a.—Serum and carbolised saline were placed in tubes as in Set 1 :—

	A	B	C	D	E	F	G	H	J	K
Serum, 1 in 50	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.25 c.c.
Carbolised saline	0.0	0.5	1.0	1.5	2.0	1.25	1.5	2.0	2.5	1.75 c.c.

The bacterial emulsion was added to the whole of the fluid in each tube (not to 1 c.c. of each dilution.) Emulsion added (0.05 c.c.), and tubes incubated as in Set 1a.

Result :—Agglutination and clearing in all tubes from A to J, inclusive. No agglutination in K.

Set 2b.—Tubes put up similarly to last set (Set 2a), but with 0.1 c.c. of emulsion (double quantity) added.

Result :—Agglutination and clearing in A, B, C, D, and E. No agglutination in other tubes.

The actual dilution of the serum in these tubes, therefore, is the same in both tests (Sets 1 and 2), but the actual amount of serum in each tube is not the same in correspondingly lettered tubes in each test.

With each set, control tubes were put up, containing (1) serum and saline, and (2) emulsion and saline.

Note on Readings—"Agglutination" is to be interpreted as a definite macroscopic aggregation of organisms into clumps deposited either at bottom of tube or at bottom and along sides of tubes.

"Clearing," where the supernatant fluid is free to the naked eye, of suspended organisms—i.e., agglutination and sedimentation.

"Slight," where there is a trace of agglutination deposit—not what one might with confidence call a definite agglutination. These "slights" are read as negative agglutinations, in considering the agglutination titre of a serum.

Conclusions.

(1) Using the same quantity of emulsion in each tube, tubes possessing the same dilution (but different quantities) of serum do not furnish parallel results. (Compare Set 1a with Set 2a, Set 1b and 2b, etc.)

(2) Using the same quantity of emulsion in each tube, tubes containing the same quantity of serum do furnish parallel results.

(3) The agglutination titre varies with the quantity of emulsion used, for :—

(a) With 0.5 c.c. of concentrated emulsion (10 X), the minimum amount of this serum which will produce agglutination is 0.006 c.c.

(b) With 0.1 c.c. of concentrated emulsion (10 X), the minimum quantity of serum required is 0.02 c.c.

Experiments were then carried out to test the effect of dilution on an agglutination system.

Tubes were put up, containing :—

	A	B	C	D
Pure Serum	0.02	0.015	0.01	0.005 c.c.
Emulsion (10 X)	0.05	0.05	0.05	0.05 c.c.

Test 1—Volume of fluid in each tube made up with carbolised saline to 1 c.c.

Test 2—Volume of fluid in each tube made up 2.5 c.c.

Results, both tests :—A and B, agglutination and clearing. C, agglutination. D, no agglutination.

Test 3—A tube was put up, containing 0.02 c.c. pure serum and 0.05 c.c. emulsion (10 X), and carbolised saline added up to 2.0 c.c.

Result :—Agglutination.

These tests show that the dominating factor is the quantity of serum in each tube, and not the degree of dilution. Of course, if equal quantities of each dilution be taken for testing, the quantity of serum in the tube will vary as the dilution (as is shown in the Set 1a). On the other hand, in the practical application of the agglutination test the important figure is what may be termed the "end-point"—i.e., the smallest quantity of serum which will produce agglutination with a standard quantity of emulsion. The necessity, therefore, arises for taking for all tests an exactly similar quantity of diluted serum, hence it is advisable to refer to the agglutinating titre of a serum as "so many cubic centimetres of serum," and not as "up to a dilution of such and such." For the statement of the dilution to be of any guide to other workers this must be supplemented by a statement referring not only to the actual amount of diluted serum used, but to the actual quantity of emulsion used also.

Adopting the suggested method—i.e., the statement of the exact quantity of serum used, the amount of emulsion used is the only supplementary factor required to be known, for, as is shown by these experiments, and by the following section, the amount of emulsion markedly and in a regular manner affects the agglutination titre.

Influence of Quantity of Emulsion on Agglutination. Also a note on a peculiarity of agglutination.

As is indicated in the preceding experiments, the quantity of emulsion present in a tube in which there is a certain definite amount of serum (or, in other words, the proportion between the amount of emulsion and the amount of serum), has a bearing on whether that parti-

SERUM. c.c. of pure Serum.	EMULSION. c.c. of Standard X.										
	10	8	6	4	2	1	0.8	0.6	0.4	0.2	0.1
0.2	++	++	++	++	+	+	+	++	++	++	++
0.16	++	++	++	++	++	+	+	++	++	++	++
0.12	+	+	++	++	++	+	+	+	++	++	++
0.08	—	+	+	++	++	++	+	+	++	++	++
0.04	—	—	+	+	++	++	++	+	+	+	++
0.02	—	—	—	—	+	++	++	++	++	++	++
0.016	—	—	—	—	—	+	++	++	++	++	++
0.012	—	—	—	—	—	+	+	++	++	++	++
0.008	—	—	—	—	—	—	+	+	++	++	++
0.004	—	—	—	—	—	—	—	—	+	++	++
0.002	—	—	—	—	—	—	—	—	—	+	++
0.0016	—	—	—	—	—	—	—	—	—	—	—
0.0012	—	—	—	—	—	—	—	—	—	—	—
0.0008	—	—	—	—	—	—	—	—	—	—	—
0.0004	—	—	—	—	—	—	—	—	—	—	—
0.0002	—	—	—	—	—	—	—	—	—	—	—

cular quantity of serum will show agglutination of the bacilli or not.

The tests, 1a and 1b (see Conclusion 3), showed that whereas with 0.05 c.c. of emulsion (Standard 10 X) agglutination occurred with quantities of serum varying from 0.006 c.c. up, with 0.1 c.c. of the same emulsion the smallest quantity of serum to give agglutination was 0.02 c.c.

To further elucidate this relationship, a large number of tubes, with varying proportions of emulsion and serum, were put up. On account of the wide range in quantities over which the experiment was made, various concentrations of serum and of emulsion were used in actually making the test.

These basal dilutions were:—

Of serum:—1 in 5, 1 in 50, and 1 in 500.

Of Emulsion:—A standard suspension "X," and also one standardised to 10 X—i.e., 10 times as strong.

The quantities of emulsion used are stated throughout the table in terms of standard X emulsion, but for those tubes shown in the table as containing 1 c.c. and over of standard X emulsion, the 10 X emulsion was used; the amounts of this (standard 10 X) that were put in being 0.1, 0.2, 0.4, 0.6, 0.8, and 1 c.c. respectively. Similarly in regard to the serum—for those tubes shown as containing 0.04 c.c. of serum and over, the basal dilution of 1 in 5 was used, the quantities of this that were put in being 0.2, 0.4, 0.6, 0.8, and 1 c.c. respectively; for those tubes shown as containing from 0.002 to 0.02 c.c. of serum a basal dilution of 1 in 50 was used, the quantities being 0.1, 0.2, 0.6, 0.8, and 1 c.c. respectively; for those tubes shown as containing less than 0.002 c.c. of serum, a basal dilution of 1 in 500 was used, the quantities of this that were put in being 0.8, 0.6, 0.4, 0.2, and 0.1 c.c. respectively.

In each tube the total quantity of fluid was made up to (approximately) 2 c.c. Control tubes were put up, (1) of serum, and (2) of emulsion, and in each case remained unchanged.

These tests show that the quantities of emulsion and of serum combining to produce agglutination bear a direct relationship to one another. The result is particularly striking if one takes the extreme results ("the agglutination and clearing," end-point, shown by ++), which are found to form a straight line when plotted as a graph.

It will also be noted that this arrangement is kept up over the whole length of the series.

One further point is evident from this table—namely, that there is a partial inhibition with certain proportions

of emulsion and serum, as may be seen from looking at the tubes containing:—

2 c.c. emulsion and 0.2 c.c. serum;

1 c.c. emulsion, and 0.2, 0.16, and 0.12 c.c. serum;

0.8 c.c. emulsion, and 0.2, 0.16, 0.12, and 0.08 c.c. serum;

0.6 c.c. emulsion, and 0.12, 0.08, and 0.04 c.c. serum;

0.4 c.c. emulsion, and 0.08, and 0.04 c.c. serum;

And 0.2 c.c. emulsion, and 0.04 c.c. serum.*

Comparing these with tubes lower down in the same column where the amount of serum is less, we find that where the smaller quantities of serum are used there is again complete agglutination and clearing. Further, where larger quantities of serum are used, there is also agglutination and clearing, the inhibition thus being apparently zonal. This is well seen in the columns of tubes containing—0.8, 0.6, 0.4, and 0.2 of emulsion.

Further, in the table, this zone of inhibition is found to lie approximately parallel to the agglutination end-point; it seems, therefore, as if there were at least two maxima of agglutination, for a given quantity of serum, varying with the quantity of emulsion, and, between these two maxima, the zone of inhibition.

A peculiar agglutination phenomenon similar to this had been noted before with serum from the same animal.

In this previous test the same amount of emulsion was used in each tube, and the following quantities of serum placed in tubes:—

A	B	C	D	E	F	G
0.15	0.1	0.075	0.05	0.02	0.01	0.005 c.c.
+	+	+	++	++	+	—

After incubation for 24 hours, there was agglutination deposit in all the tubes except G, but there was a marked increase of opacity of the supernatant fluid going from C to A—i.e., with the greater amount of serum. The only tubes where the supernatant fluid cleared were D and E. After incubating for a total of four days, all the tubes—A, B and C—showed clearing. Emulsion control, it should be noted, remained unchanged—i.e., were not sedimented. It was considered at the time that, as the most outstanding feature was the failure of A, B and C to sediment, the cause might be physical, and that the reason sedimentation did not occur was because of the increased viscosity in these tubes, due to the large amount of serum. In view of the further experiment detailed above in table, and of the mention by Hewlett of a similar phenomenon of a

* An enclosing line is used in the table to make these tubes more evident.

zone of inhibition with *M. Melitensis*, no suggestion as to the cause is offered. No opportunity of consulting the work referred to by Hewlett has been possible, but phenomenon, in the main, seems parallel.

The phenomenon is of importance in that an apparent falling off in the agglutinating power of a serum does not necessarily mean that the end-point is to be expected in the next tube.

There may be a zone of lessened agglutination, and then a further increase may be met before the end-point of agglutination reaction. This "end-point" of reaction figure is important in Contagious Abortion, as it affords a means of comparing an animal's condition from time to time as regards the progress of the disease.

Optimum amount of Emulsion to use.

Here, again, there being no universal standard adopted observers cannot strictly compare their results. Thus, to say that an animal, 0.05 c.c. of whose serum produces agglutination, should be considered as affected, in reality conveys no definite meaning, in view of the experiments above, unless the amount of emulsion be stated at the same time. On the other hand, workers find by experience what is a convenient quantity of emulsion to use, based on the size of the tubes employed, etc., and having found this amount retain it as a standard, and use this in future; their own results, therefore, are strictly comparable with one another, but not with those of other workers.

The following experiments were made to determine what quantity, allowing for ease of reading after 24 hours' incubation, was suitable to use.

Material.

Serum, from Cow (as used in previous tests).

Emulsion (standardised, = "10 X").

Four sets of tubes, numbered 1, 2, 3, 4, were put up, using a different quantity of serum in each set. Each set consisted of four tubes—A, B, C, and D, and the quantity of emulsion used was:—

	in the A tubes	0.05 c.c.	10 X emulsions.
" B "	"	0.025 c.c.	" "
" C "	"	0.01 c.c.	" "
" D "	"	0.005 c.c.	" "

To Set 1 was added 1 c.c. diluted serum (equal to 0.02 c.c. pure serum), and carbolised saline was added, to make the Total Vol. 2 c.c.

To Set 2 was added 0.5 c.c. diluted serum equal to 0.01 c.c. pure serum, and carbolised saline was added, to make Total Vol. 2 c.c.

To Set 3 was added 0.25 c.c. diluted serum (equal to 0.005 c.c. pure serum), and carbolised saline was added, to make the Total Vol. 2 c.c.

To Set 4 was added 1 c.c. diluted serum (equal to 0.02 c.c. of pure serum), and carbolised saline was added, to make the Total Vol. 20 c.c.

Controls.—Serum controls were put up, and remained unchanged.

Emulsion control tubes, of each quantity of emulsion used, with carbolised saline added, were put up, and remained unchanged.

Sets 1, 2, and 3 were read at the end of 24 hours' incubation, the result being:—

	A c.c.	B 0.05	C 0.025	D 0.01	D 0.005
Set 1, pure serum					
0.02 c.c.	+	+	+	+	+
Set 2, pure serum					
0.01 c.c.	+	+	+	+	+
Set 3, pure serum					
0.005 c.c.	—	+	+	+	+
Set 4, pure serum					
0.02 c.c.	+	+	+	+	?

Note.—Set 4, at the end of 24 hours' incubation, showed positive agglutination with 0.05 c.c. of emulsion—i.e., in tube A, but not in the other tubes—B, C, and D.

In tubes B and C, containing 0.025 and 0.01 c.c. emulsion, a positive agglutination was manifest at the end of three days' incubation, but the deposit in tube D, with 0.005 c.c. emulsion, even at the end of this time, was very small indeed—in fact, barely appreciable.

The controls, it should be mentioned, remained unchanged.

From these experiments it appears as if the large volume of fluid (20 c.c.) in Set 4 affected the rate of sedimentation of the clumps of bacilli in those tubes with the smaller quantities of emulsion. As, however, such a large quantity of fluid is not used in the tubes in making a diagnostic test, these results in Set 4 are not of great importance. In the practical application of the test the total volume of fluid in each tube is usually made up to about 1.5 c.c. A number of tests have also been made in which the total amount was 2 c.c. The tubes in Sets 1, 2 and 3, where the total volume has been made up to 2 c.c., are, therefore, of primary importance. Here it is found that such a quantity of emulsion and of total fluid have been employed that the complete agglutination reaction takes place within the first 24 hours.

Tubes of 2.5 c.c. capacity have been found very suitable in making the test, and the amounts of diagnostic material (serum, whey, etc.), and of emulsion, are, even over a large range of quantities, but involving only a few different basal dilutions, easily contained in 1.5 or 2 c.c. of fluid. Also, 24 hours is a convenient time for incubation before reading the results.

Where the total volume of fluid in each tube is made up to 1.5 or 2 c.c., with incubation extending over 18 to 24 hours, the optimum of emulsion will be the smallest quantity which gives results that are easily read, whether the agglutination reaction be positive or negative.

The deposit following agglutination should be such that it can be easily distinguished by the naked eye, even though, as is frequently the case, the whole of the organisms be not sedimented.

In the absence of deposit—i.e., in a negative agglutination reaction, there should be such a quantity of emulsion that a tube containing it can be easily distinguished from a tube not containing any emulsion.

It is of interest here to note the naked eye appearance of the emulsion controls to the sets of tubes under review. In four of these controls the total volume of fluid was made up to 2 c.c., with carbolised saline; in the other four to 20 c.c.

Amount of Emulsion.	Total Volume.	Naked Eye appearance.
(1) 0.05 c.c.	2 c.c.	cloudy.
(2) 0.025 c.c.	2 c.c.	faint cloudiness.
(3) 0.01 c.c.	2 c.c.	trace of cloudiness.
(4) 0.005 c.c.	2 c.c.	no cloudiness.
(5) 0.05 c.c.	20 c.c.	faintly hazy.
(6) 0.025 c.c.	20 c.c.	trace of haziness.
(7) 0.01 c.c.	20 c.c.	haziness appreciable only on comparison.
(8) 0.005 c.c.	20 c.c.	no haziness.

Of those emulsion controls containing 2 c.c. of total fluid, it will be seen that (1) and (2) above possess such a degree of cloudiness that they are readily distinguishable to the naked eye as containing emulsion.

These tubes contain 0.5 c.c. and 0.025 c.c. respectively.

In Sets 1, 2 and 3 of agglutination results recorded above the smallest deposit (positive agglutination), which

is easily read (tubes containing 2 c.c. of fluid), is that where there is 0.025 c.c. of emulsion.

In Set 4, the only tube where (although there was the same quantity of serum in each tube), agglutination was manifest in 24 hours, was that one in which there was 0.05 c.c. of emulsion in the tube.

With this large volume of fluid (20 c.c.), no smaller quantity gave a completed reaction in 24 hours.

From these experiments, therefore, it has been concluded that the optimum amount of emulsion to use is 0.05 c.c. of "Standard 10 X" emulsion (or 0.5 c.c. of "Standard X" emulsion).

This amount, 0.5 c.c. of "Standard X" emulsion has, therefore, been adopted for use in all practical diagnostic tests for the reasons that:—

(1) It gives a marked naked eye deposit (and hence in easily read), in a positive reaction;

(2) Conversely, it gives a definitely cloudy appearance (and hence is easily read), in a tube where there is no agglutination.

(3) With the total volume of fluid in the tube anything from 1½ to 20 c.c., the agglutination reaction is complete in 24 hours.

(4) It is the minimum amount of emulsion that will answer the above requirements.

In conclusion, I wish to express my best thanks to Professor H. A. Woodruff, Director of the Institute, for permission to undertake this work, and for much kindly help and advice.

BORDER COUNTIES VETERINARY MEDICAL SOCIETY. [NATIONAL V.M.A. NORTHERN BRANCH].

A meeting was held in the Bush Hotel, Carlisle, on Saturday, 18th Sept., 1915.

Present:—Mr. Barrow (President), Messrs. Garnett, Hewson, Lindsay, Bell, Pollock, Donald, Bowlas, and and Secretary (Mr. R. Craig Robinson).

The meeting was called by the President, to consider two letters received from Mr. Donald.

Mr. F. W. Garnett was elected to the chair, which he vacated shortly after, on the arrival of Mr. Barrow.

The minutes of the previous meeting were read and confirmed.

The letters in question had reference to a statement concerning tuberculin testing made in course of conversation at the previous meeting, but subsequent to the conclusion of the meeting, to which Mr. Donald took exception.

[Mr. Donald had, some time since written a letter which appeared in the public press in Scotland, on the methods of some practitioners in tuberculin testing, which was a slur on the profession. At a meeting of the Border Counties Veterinary Society, on April 10, 1915, this letter was considered.]

The present meeting was mainly conversational in character, in the course of which—

Mr. DONALD stated: "The practice I have been condemning is that veterinary surgeons are known to test cattle and give a certificate, but allow the temperatures to be taken by the owner or his agents."

Mr. GARNETT: I should like to object to that statement by Mr. Donald, and unless he has proof of it it must not go forward. It is damaging to the profession, and has done a great deal of damage already. He makes general charges and is accusing the whole profession of doing this. I ask him to mention the men. Where are his facts now? If they are true, I will bring them before the Council to act.

Mr. DONALD: No, you misunderstood me. All I said was what I was complaining of in others, and this Society considered the matter, and they came to the

conclusion if a guilty man could be found he ought to be exposed. I think it is their duty to expose him. I understand that Mr. Hewson has named a guilty man, and I am him.

Mr. HEWSON: To simplify matters I did say—the meaning of it was—that Mr. Donald, in testing cattle, did not take the whole temperatures himself; he left a substitute to take them.

Mr. DONALD: I don't deny that I have allowed my son.

Dr. HEWSON: Was he qualified then?

Mr. DONALD: No.

Mr. HEWSON: The bulls were not tested for my brother. He tested them on his place.

The bulls in question are pedigree stock, and there is a record of where they were sold; I can supply you with that. I am sorry I thought that would not be necessary. I can get you the date.

Mr. GARNETT: What is complained of here was the letter in the public press. I ask you for a specific case where this has been done, or withdraw your letter.

Mr. DONALD: I will substantiate it at the proper time.

At a subsequent stage of the meeting Mr. Garnett said: It is immaterial who your informant was with regard to this general charge that veterinary surgeons go up and down testing bulls and giving certificates, and the owners taking the temperatures. That was publicly made. It should either be publicly withdrawn or publicly substantiated. I propose the Society calls on Mr. Donald to substantiate the charges made in the public press with regard to that matter.

I think it is a duty you owe us all, or else withdraw your letter.

Mr. DONALD: I am not going to withdraw it. I know the statements therein are true in substance and in fact, and more people know it than I.

You must not depart from the original strict terms of my letter.

Mr. LINDSAY: I think you are not doing your duty to the profession by allowing that to lie dormant. You cast a reflection on the profession. You ought to clear the remainder.

Mr. GARNETT: You publicly accused, in the public press, the veterinary surgeons that they are doing this thing. It was in the *Scottish Farmer*.

Mr. LINDSAY: I can assure you that Mr. McNeillage, of the *Scottish Farmer*, went for the veterinary inspectors. He showed them up in a most disgraceful manner.

Mr. GARNETT: I move formally:—The Society calls upon Mr. Donald to substantiate or withdraw that letter. It is a serious reflection on any veterinary surgeon's reputation.

Mr. LINDSAY: I beg to second Mr. Garnett's motion.

A vote was taken, and the President declared the resolution carried.

Mr. DONALD: Having passed that resolution, what is the nature of the substantiation you require, or withdrawal? How is the withdrawal or the charge to be made?

Mr. GARNETT: It will have to go before the Council. You will have to state a case.

Mr. DONALD: I should take it that I have to make it to this meeting—the men who have passed the resolution. Do they want the explanation?

Mr. GARNETT: I will make it that Mr. Donald gives information to the Secretary of the Royal College of Veterinary Surgeons, to lead to proving the substance of his letter. They will inquire into it, for a more unprofessional thing I never heard of—if it is true.

After further conversation—

The CHAIRMAN: I should like, before we close the meeting, that two Vice-Presidents, a Treasurer, and an Auditor be elected. The treasurership is joined with the secretaryship, and I think it would be better if it

was not, for the simple reason in matters of this kind we should have a meeting without calling a general meeting, many a time, to see into matters. I cannot call a meeting on rule 5, as there are no vice-presidents and no auditor.

It was decided to leave the matter over till the annual meeting.

PARLIAMENTARY.

In the House of Commons.

VETERINARY OFFICERS.

Mr. G. S. TERRELL asked the Under Secretary for War whether the bonus payable to veterinary officers of the Territorial Force under paragraph 497 was payable to all veterinary officers serving both at home and abroad.

Mr. FORSTER (Financial Secretary to the War Office), replied: The claims under Article 497 of the Pay Warrant of officers employed under the conditions of Article 496 are not affected by the question whether their service is given at home or abroad.

The Kennel Club.

The possession of Olympia being required for a further period by the War Office the committee of the Kennel Club are reluctantly compelled to abandon their show for 1915. It is impossible, in their opinion, to come to any other decision, if for no other reason than their inability to obtain the use of a suitable building for the purpose. The Kennel Club Retriever Trials for 1915 have also been abandoned.

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Sept. 24.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieutenants to be temp. Captains:—

E. Nicholson. Dated Aug. 6.

W. H. Priston. Dated Aug. 31.

C. W. Makinson. Dated Sept. 7.

Sept. 27.

Temp. Major E. E. Bennett to be temp. Lt.-Col. whilst holding apmt. of Asst. Dir. Vet. Serv. Dated Sept. 28.

Capt. J. O. Andrews to be temp. Major whilst holding apmt. of Asst. Dir. Vet. Serv. Dated Sept. 7.

Sept. 28.

Temp. Lieuts. to be temp. Captains:—

A. Young. Dated Aug. 13.

W. D. Halfhead. Dated Aug. 17.

J. McL. Dawson. Dated Aug. 25.

E. A. Phipps. Dated Aug. 29.

A. R. Smythe, E. S. Dixon. Dated Aug. 31.

J. S. Young. Dated Sept. 1.

W. W. Lang. Dated Sept. 4.

E. E. Jelbart. D. Hannay. Dated Sept. 7.

A. C. Smart. Dated Sept. 8.

J. B. Walker. Dated Sept. 12.

R. C. Allinson. Dated Sept. 13.

J. E. Young, J. Godber. Dated Sept. 15.

R. P. Johns. Dated Sept. 18.

J. P. Dunphy. Dated Sept. 19.

To be temp. Lieuts:—

A. Plant. Dated Sept. 14.

W. Gardner. Dated Sept. 16.

Sept. 28.

Lieut. W. N. Jürgensen to Capt. Dated Sept. 3.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Lieut. G. McIntyre to be Captain. Dated Aug. 19.

Sept. 25.

To be Lieut.:—J. R. Welsby. Dated Sept. 26.

Sept. 29.

Temp. Lieut. R. J. Collings to be temp. Capt. Dated Sept. 16.

Temp. Lieut. P. A. Wilks relinquishes his commission. Dated Sept. 8.

OVERSEA CONTINGENTS.—CANADIAN A.V.C.

Sept. 25.

Lieuts. to be temp. Captains:—

C. V. Best, A. E. Cameron, A. H. Hunter. Dated July 1.

The following casualties in the Mediterranean Expeditionary Force are reported:—

DIED—Sgt. D. Horsley, 108.

Corpl. G. Harrison, 1444.

WOUNDED—Sgt. M. Staples, 4991.

The A.V.C. Comforts Fund.

Mrs. MOORE requests us to announce that her address from October 1st will be—

Strathyre, Parsifal Road,
Hampstead, London, N.W.

She hopes that all subscribers and contributors to the Army Veterinary Corps Comforts Fund will accept this intimation of the change of address for parcels and letters.

Personal.

MAYOR—VINCENT. On Sept. 22, at St. Peter and St. Paul, Horndon-on-the-Hill, Essex, by the Rev. Sydney Fischel, assisted by the Revs. Vincent Iremills and Burgess, George Gordon Mayor, of Addlestone, Surrey, and Millicent Kirk, elder daughter of Sydney Vincent, M.R.C.V.S., and Mrs. Vincent, of Brentwood, Essex.

Mr. ROBERT BRYDON, aged 71, of The Dene, Seaham Harbour, Durham, one of the best-known agricultural horse breeders, a member of the Royal College of Veterinary Surgeons, left estate valued £46,394.

OBITUARY.

TODD.—On the 25th Sept., at 109 Royal Parade East, Eastbourne, Henry Arthur, the infant son of Maj. A. G. Todd, A.V.C., aged seven weeks.

VALIDITY OF AGREEMENTS

Sir,—Re enquiry of "Pro Bono Publico" in your issue of 25th inst.,—

The agreements to which he refers are known in Law as "Contracts in Restraint of Trade."

It must be admitted that of late years judges have shown a marked disposition to closely criticise such agreements and to declare them invalid if they contain what seem to the Judges to be harsh provisions. But they are still held to be binding on the employee, provided the area covered and the duration are reasonable and no more than sufficient to protect the interests of the employer.

It is usually held by the Courts that, for the Professions, a radius of ten miles and a duration of ten years are not unreasonable. But in one case, affecting a solicitor, it was decided that a radius of twenty miles was not unreasonable, since the business of a solicitor is mainly transacted in his office.

Sept. 28, 1915.

Yours truly, Lax.

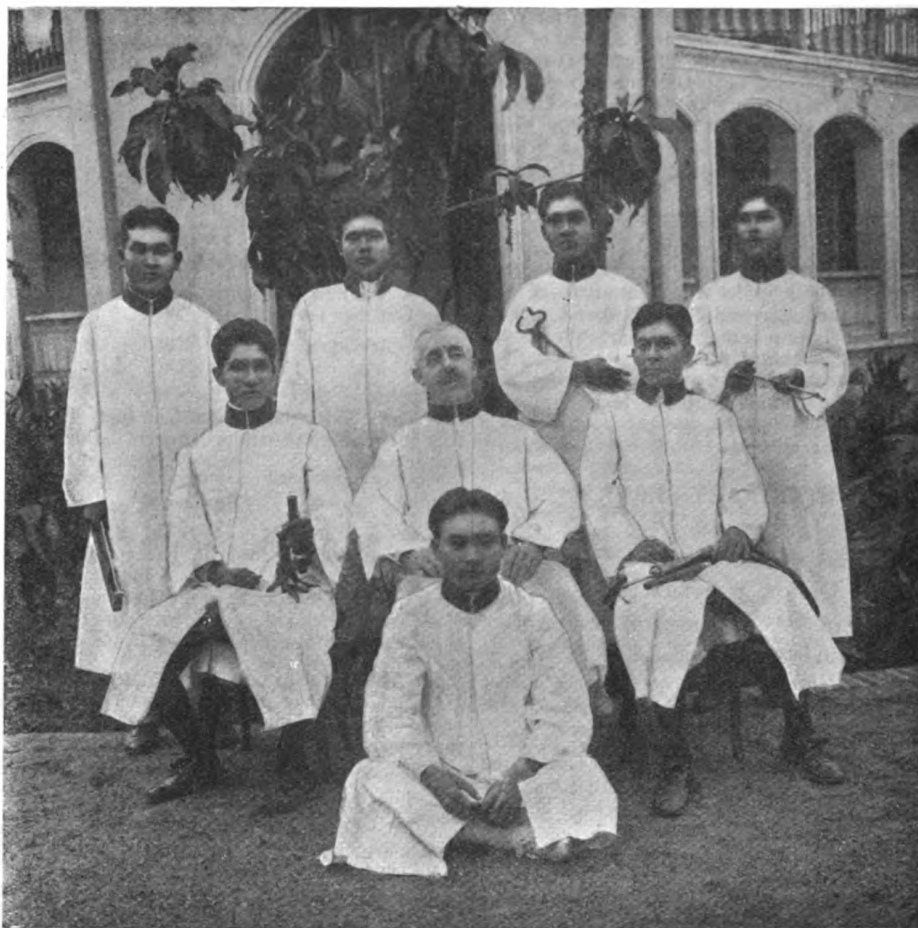
Siamese Veterinary Students.

There is now a veterinary school in Bangkok. Mr. G. J. Harvey, veterinary surgeon to the Ministry of Agriculture, has had seven students in his care for the last six months, and they show every promise of becoming proficient in their profession, as they have an aptitude for the work and already are able to do a good deal on their own account.

It was the intention of the Ministry of Agriculture to engage six British veterinary surgeons to do work of this nature in different parts of the country, but owing to the claims of the Army Veterinary Corps after the outbreak of the war it was impossible to obtain this

herd to take its chance and thus spreads disease by contact, and also by infecting the grass. Human beings are infected by eating the meat of an animal which has died of disease. In one case there were a hundred and twenty deaths of cattle from anthrax, and forty deaths of human beings.

Another cause of infection is that the skin of a dead animal is kept until the Chinese buying agent comes round, and then starts on a journey, spreading infection all the way until it reaches a godown in Bangkok for export. As animals are not usually killed for food it is evident that most of the skins come from animals which have died of disease.



MR. G. J. HARVEY, M.R.C.V.S., AND HIS PUPILS IN SIAM.

number. Now, however, there is good reason to suppose that Siamese students will become sufficiently qualified to do the work themselves, though it will necessarily be some time before the number is anything like adequate to the demands.

On the subject of cattle disease and the need of preventive measures, Mr. Harvey has gathered a good deal of information in the course of his journeys up country. There are three diseases very prevalent and fatal to cattle, namely, rinderpest, quarter ill, and anthrax. Man is susceptible to the latter.

Farmers and cattle owners do not have to travel their animals for pasture in this country, as it is plentiful within each village boundary, so disease is not spread in that way; but a sick animal is turned into the common

As regards preventive measures, inoculation for rinderpest will prove very expensive unless some control is exercised over the owner and his diseased animals. The spread of a local outbreak could be prevented by a law forbidding the skinning and eating of diseased carcasses and by the inoculation of all uncontaminated animals.

The losses from disease have become so enormous that it is estimated that in the last three years, valuing oxen and buffaloes at Tcs. 30 each, and pigs at Tcs. 10, the country has lost property to the value of twelve million ticals. A law such as that suggested ought to reduce the loss by fifty per cent. in the first year, and in three years it should have practically declined.—*Bangkok Daily Mail*.

ANNUAL REPORT OF THE PUBLIC HEALTH DEPARTMENT OF THE CITY OF EDINBURGH, 1914, BY A. MAXWELL WILLIAMSON, M.D.

The veterinary work in this report comes under the heading of Administrative. Portions here printed give the greater part of the work done, omitting several tables, and some details. We conclude that next year the veterinary department will furnish its own report.

MEAT INSPECTION.

The number of cattle dealt with at the slaughter-houses during the year 1914 showed an increase of 1609 as compared with the previous year. There were 431 fewer calves, 397 fewer pigs, and 6856 fewer sheep.

A constant supervision was kept at the slaughter-house during killing hours, and no case of contagious disease was detected.

Tuberculosis is by far the most common disease found in the carcasses of cattle, 214 animals being found more or less affected. A larger percentage of cows were affected with this disease than in the previous year on account of the numbers seized and slaughtered under the Tuberculosis Orders 1913 and 1914.

A large number of livers and lungs of cattle and sheep were destroyed on account of parasitic and other conditions.

The amount of foreign meat arriving in Edinburgh fell off greatly on the outbreak of the war. After the month of August the greater part of the chilled and frozen meat from abroad was taken over by the War Department authorities, and only a small amount arrived in this city. The deficiency, however, was made up by carcasses of Irish cattle sent through from Glasgow, and the dead meat markets were kept well supplied.

Considerable quantities of Swedish pork continued to arrive at the port of Granton in a half-cured state, most of it being sent to Glasgow and Leith curing factories and only a small quantity retained in Edinburgh. All the cases and bales bore the stamp of the veterinary surgeon who had examined them before shipment.

A good many carcasses arrived from country districts, and these were mostly of good quality, being accompanied by certificates from veterinary surgeons. Many country butchers sell the cheaper parts of carcasses in their own districts, and send on the roasts and rumps to the Edinburgh meat markets. These have all been found satisfactory.

One diseased live cow was seized whilst exposed for sale in a fat stock sale yard, and the owner was fined £15.

Four quarters of cow beef were seized in one of the dead meat markets, and a fine of £50 was imposed on each of the two owners. The total fines for the year amounted to £115.

FOREIGN MEAT.

The following figures give approximately the amount of foreign, frozen, and fresh meat brought into the city during 1914:—

Chilled and frozen beef	equal to 5,850 carcasses.
Boneless meat	... 300 "
Pork in carcase, frozen	... 300 "
" fresh (Dutch)	... 500 "
River Plate and Australasian mutton and lamb	31,000 "
Dutch and Colonial calves in carcase	2,200 "

Diseases found in the carcasses seized in the slaughter-houses and throughout the city:—

Tuberculosis 167, Decomposing 36, Traumatism 11, Peritonitis 5, Oedema 11, Asphyxia 12, Emaciation 8, Pyrexia 1, Enteritis 9, Pneumonia 7, Mastitis 2, Poisoned 1, Atelectasis 3, Milk Fever 1, Metritis 3, Swine Fever 2, Vertigo 1, Dystokia 1. Total 281.

TUBERCULOSIS IN COWS.

Cows slaughtered during the year	...	655
Affected with tuberculosis	... (12.36 %)	82
Consigned from the city	...	12
From beyond the city	...	70
Cows with tuberculous udders, city byres	9	
From beyond the city	26	
	(42.68 %)	35

Those from the city byres, with one exception, were slaughtered under the Tuberculosis Orders of 1913 and 1914.

Cow BYRES.

There were at the end of the year 3 fewer dairy byre premises than in the previous year, and 72 fewer cows.

There were 61 dairy byre premises at the end of the year, and the number of cows housed therein was 2123, while 8 private byres contained 17 cows.

Tuberculosis is the disease most common in all dairy cows. 28 of these were removed from the city byres during the year. 13 of them were reported to the Inspector under the Contagious Diseases (Animals) Act. These were all seized and slaughtered by him under the Tuberculosis Orders. 15 were removed under the Edinburgh Municipal and Police (Amendment) Act, after the Tuberculosis Order ceased to operate, the Order being suspended on account of the war.

Four cows were removed on account of other conditions affecting their milk.

The country byres in close proximity to the city received more attention than hitherto, 90 visits having been paid to them, with the result that 10 cows were found suffering from tuberculosis. Five of these were detected as the result of visits paid to byre premises in consequence of the milk coming from them showing evidence of tuberculous affection. These cows were reported to the County Veterinary Inspector and dealt with by him under the Tuberculosis Order, which required the cows to be slaughtered, with compensation to the owner.

Microscopical examination in the Public Health Office Laboratory, of any discharge, such as milk, expectorate, etc., was always resorted to in order to assist diagnosis, and over 200 samples were examined during the year.

Bacteriological Examinations.—Milk	specimens	120
Expectorate	"	89
Lochia	"	2
Scrapings from rectum	"	4
Total		215

Tubercle Bacilli in the milk in	...	cases	21
in the expectorate			12

(In both expectorate and milk 3 cases.)

Clinically tuberculous (no expectorate, and milk free from bacilli)	...	4
Re-acted to tuberculin	...	4
Total		41

DAIRIES.

The inspection and supervision of dairy premises and of the methods adopted in dealing with the milk supplies of the city have been carried out with the same diligence as in former years.

The measures referred to in the last report, which were directed against the prevailing neglect attaching to the conditions under which milk was conveyed by rail, have produced a very marked improvement during the past twelve months, so that only a comparatively small quantity of milk has been destroyed as unwholesome by reason of the condition of the vessels in which it was being conveyed.

The outstanding event of the year has been the passing of the Milk and Dairies (Scotland) Act, 1914, described in the preamble as an Act to ensure the Purity of Milk Supplies, and to regulate Dairies in Scotland and for other purposes connected therewith. This measure, which becomes operative during the current year, appreciably extends the limits of supervision presently in use, and will have the immediate effect of introducing a set of Regulations to be framed by the Local Government Board, and of affording the Local Authority an opportunity of remodelling the local By-laws.

It is interesting to notice that certain conditions pertaining to the trade and regarding which legislative control has been advocated in former issues of this Report are now provided for.

425 dairy-keepers are at present on the Register, and as byre premises are not included, being dealt with under a specific heading, this implies that 425 premises are used for the distribution of milk, either as retail shops or solely as depots for supplying shops and vans. Of the latter class there are three establishments in the city, so that there are actually 422 premises which come under the designation of dairy shops. The number of dairy-keepers involved is subject to slight modification if the duplication of names is taken into account, as certain of the larger dealers carry on business at various branches, the 425 names being reduced in this way to 408 individuals.

The reference to the large establishments conducting a dairy business pure and simple suggests a comparison with the class of shop, about 50 per cent. of the whole, where milk is nothing more or less than an "accessory

or side line." That the latter type of business should have continued in such proportion up to the present is solely due to the limited powers hitherto possessed by the authorities. These shops undoubtedly add to the apparent volume of Sunday trading, and their existence implies, moreover, that the article of food most susceptible to improper treatment is being largely handled by a class of shopkeeper who regards it as a subsidiary commodity, and is besides incapable of appreciating the importance of its purity to the customer.

The Journal of the Board of Agriculture.

An Official Agricultural Journal published on the 15th of each month. Price 4d. Monthly, Post Free.

At the present time an endeavour is being made to publish matter of definite interest and value under War conditions. Summaries of Agricultural Experiments, Notes on Agricultural Co-operation and Small Holdings, and Market Prices appear each month. The Journal is usually illustrated.

Farmers, land agents, landowners and others are asked by the Board of Agriculture and Fisheries to support their Journal, which is definitely published for the benefit of all classes of agriculturists, and is accordingly sold at a very low price (Three months, 1s.; Six months, 2s.; Twelve months, 4s., Post Free).

The Journal should be bound and placed on the book-shelf of every agriculturist for reference purposes; it will answer hundreds of questions which are put to the Board every month.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.		Out-breaks	Slaugh-tered.*
	(a)		(a)		(b)		(b)			(a)	
Gr. BRITAIN.											
Week ended September 25	6	6					8	15	2	27	118
Corresponding week in											
1914 ...	9	12			2	17	4	4		94	598
1913 ...	9	9					23	41	1	32	610
1912 ...	5	5	3	44	4	8	12	14	2	27	445
Total for 39 weeks, 1915 ...	442	503			36	66	‡628	‡1354	164	3163	13920
Corresponding period in											
1914 ...	557	612	22	108	81	249	1530	2642	155	3157	31068
1913 ...	411	453			121	298	1999	3999	134	1868	24987
1912 ...	594	675	81	633	139	256	2415	5189	177	2345	30997

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, September 28, 1915.

† Counties affected, animals attacked :

‡ Figures for twenty-six weeks only.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.		Out-breaks	Slaugh-tered.*
	(a)		(a)		(b)		(b)			(a)	
IRELAND. Week ended Sept. 25	...	...	...	...	...	...	1	...	8	2	48
Corresponding Week in											
1914 ...	...	...	...	...	...	...	...	...	7	...	1
1913 ...	...	...	...	...	...	...	...	...	4	3	28
1912 ...	...	...	1	2	...	...	...	...	1	3	9
Total for 39 weeks, 1915 ...	1	1	...	...	1	3	58	...	315	193	1100
Corresponding period in											
1914 ...	1	1	76	957	...	...	67	...	407	161	842
1913 ...	...	...	...	...	...	...	102	...	394	116	721
1912 ...	3	3	29	263	...	...	53	...	266	186	1517

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Sept. 27, 1915
NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1422

OCTOBER 9, 1915.

VOL. XXVIII.

MEDICAL AND VETERINARY POST-MORTEM OPPORTUNITIES.

Some years ago a well-known London Coroner, not himself a medical man, aroused considerable feeling in the medical profession by insisting that all post-mortem examinations made for inquests over which he presided should be made by a professional pathologist. He did so on the broad ground that the average medical practitioner's experience of post-mortem examinations is not sufficient to enable him to speak with authority upon their results. In the end the Coroner got his way, though not without considerable opposition from medical men, many of whom asserted roundly that the average practitioner was perfectly capable of conducting and adjudicating upon post-mortem examinations. If such a claim could be made for medical practitioners with their limited opportunities, what ought we to be able to claim for the members of our own profession with their infinitely wider ones?

Broadly speaking, a medical man in general practice hardly ever—often never—makes a post-mortem examination except for a Coroner's inquest. Not many general practitioners appear often at inquests—some do so very rarely, for practitioners are plentiful, and inquests comparatively few. Further, in very many inquests no post-mortem examination is made. Thus, no one can deny that the average medical practitioner's opportunities of post-mortem observation are scanty in the extreme; but that cannot be said of the veterinary practitioner.

We all know that those opportunities are great—that most of us, in the regular course of practice, do far more post-mortem work for which we are paid than any family doctor, and that nearly all of us can do very many more for the reward of the work itself. Those who utilise all their opportunities, with the material found in an average-sized practice, may, and often do become very good judges of naked-eye post-mortem lesions. And though few clinicians can become very expert microscopists, there is no reason why the microscope should not be used in practice much more often than it is. Section cutting, for instance, is not so difficult an undertaking as some suppose; and one who takes it up may do quite a considerable amount of pathological histology with very little expense, and with great benefit to his naked-eye post-mortem work.

It is true that the general practitioner of either human or veterinary medicine can never reach the level of the professional pathologist. But the veterinary practitioner ought to approach far nearer to that level than the medical man.

SCROTAL HERNIA IN A SHIRE FOAL: STRANGULATION OF SAME: TREATMENT BY RADICAL OPERATION: RECOVERY.

By H. CAULTON REEKS, F.R.C.V.S., Spalding.

A brief report of this case will, I think, be interesting. It illustrates two points particularly. First, the amount of trouble into which an owner can plunge himself by disregarding the advice of his veterinary surgeon. Second, the impunity with which the abdomen may be opened up and the intestines handled provided there is due observance of strict antiseptic precautions.

My attention was first called to the case in June of this year (1915). The patient, a young shire foal, of some considerable value, was the subject of an ordinary scrotal hernia (one-sided), a quantity of what was evidently intestine protruding through the left inguinal ring and filling the left scrotal sac. The advice then given to the owner, was the advice I always give in these cases: "Allow the animal to remain untreated and the probability is that when he is a year older there will be no abnormality to be noticed. All that you have to bear in mind is to warn the operator who castrates him, should that be done."

This advice the owner disregarded. Someone or other of his friends recommended the use of a truss. The truss was obtained, and on July 14th, at 2 p.m., was applied, the foal at the time being out at grass with its mother.

On July 15, at about 8 a.m. the foal was found rolling about in the field, constantly up and down, and evidently suffering from acute colic pains. The truss was then removed, the circumstances explained to me on the telephone, and my attendance requested.

The attendance was made by my assistant, Mr. James Conner, M.R.C.V.S. On his arrival he found that the case had been in no way exaggerated. The foal was constantly up and down, and in agonies of pain, plainly suffering from strangulation of the herniated bowel. The amount of scrotal swelling now, according to Mr. Conner's description, was immense—part, no doubt, inflammatory exudation into the scrotal sac, part an œdematous filling of the scrotal tissues. In fact, the case to all appearances was hopeless.

However, the foal was cast (with the side-lines), the hind limbs spread well open, and an attempt made with some considerable degree of force to press the contents of the scrotal sac back again

into the abdomen. This attempt was unsuccessful. Accordingly, seeing the futility of attempting surgical interference with the animal in the condition it then was, Mr. Conner simply gave a fatal prognosis, and, after administering a full dose of castor oil and methylated ether, left the case more or less to chance; the only instructions to the attendant being to administer small doses of ether every two hours as a stimulant. This was the evening of July 15th.

On the following morning, July 16th, the foal was visited again, and found in much the same condition, save that the violence of the pains had somewhat abated. He was still, however, in constant pain, and, while treatment with stimulants was persisted in, the case was still regarded as hopeless.

In the evening of this day, however, the pains subsided, and on the following morning it was plain to see that the foal had recovered, or, at any rate, that immediate death from the condition was not now to be feared.

Both Mr. Conner and myself now decided that our case was practically *in statu quo*, and, that although we still had a huge enlargement of the scrotum (the size of which may be gathered from the accompanying photograph) it would still remain, after the natural removal of the inflammatory exudate and the œdema, that we simply had on our hands a foal with scrotal hernia, the natural reduction of which might still be looked for. This, however, was with the reservation that "there were no inflammatory adhesions between the scrotal sac and the peritoneum of the bowel wall."

Events, however, proved that the case was not so easily to recover. The animal now had periodical attacks of colic, and, arguing from that that adhesions had taken place, I decided to operate. My frame of mind regarding the matter may be gathered from the tone of my letter to the owner, which letter I give below:—

Dear Mr. . . . With reference to the ruptured foal. I have seen him again to-day, and feel quite confident he will be worthless as he is. Moreover, he now has occasional colic attacks, one of which will probably carry him off. Further, I should say that, owing to the inflamed condition of the parts a week or so back, there are now fibrous adhesions between portions of the ruptured bowel and the scrotal sac, rendering a natural return of the rupture now impossible.

To my mind an operation is called for. This would consist in opening up the scrotal sac (under chloroform, of course) breaking down what adhesions might be met with, placing the herniated portions of bowel back into the abdomen, and finally suturing and plugging. At the same time the foal would have to be castrated.

To be quite frank, I do not think the chances would be much in favour of the foal coming through it successfully. The operation would be a grave one. At the same time it is his *only* chance."

The reply I received to this was a laconic two lines on a post-card: "I know you are a good

operator. Do what you like." This was giving me *carte blanche* with a vengeance, for, as I then remarked to Mr. Conner, "If we accidentally remove the animal's head we shall evidently be expected to replace it."

However, on July 30th, after a preliminary four days' fasting, the foal was operated on. He was cast with the side-lines, and packed with bolsters into a convenient position on his back, the parts to be operated on being then thoroughly cleansed with ether and a pad of lint, and afterwards painted with a solution of iodine. Afterwards, the foal was chloroformed and the operation commenced.

A longitudinal incision some six inches long was made over the left scrotal sac, a little to the side of the median raphe. Immediately the sac was punctured a large amount of inflammatory fluid escaped, and the contents of the sac were exposed. As we had surmised, these proved to be small intestines.

Inserting my right hand into the sac, I now expected to be able to return the bowel inch by inch through the inguinal opening. I had not made the attempt for long, however, before it soon became apparent that reduction was not to be arrived at in that manner, and this notwithstanding I could discover no adhesions, and could, moreover, easily insert two fingers into the inguinal opening.

During this procedure it needed the two hands of my assistant tightly clasping the lips of the scrotal wound round the wrist of my inserted hand to prevent the intestines bubbling through into the open.

Seeing now that reduction was to be difficult, I am afraid that my efforts at this juncture became somewhat desperate. From above, downwards, I exerted pressure, first with the open palm, and afterwards with the closed fist, hoping even now that such would induce the return of the bowel. But it was not to be. Finally, I was compelled to desist, and, with my hand still in the scrotum, to hold a hurried consultation with Mr. Conner as to what should be done.

Probably what now was needed was a bistoury caché. With this the inguinal canal might have been enlarged and return of the bowel rendered easier. This instrument, however, was not to hand, and it was plainly evident that to use a naked scalpel would have been highly dangerous, if not impossible.

Since it was plain now that reduction of the bowel was not to be brought about by pressure or other means from the outside inwards, it was equally plain that the only alternative was taxis on the bowel exerted by way of the abdomen. As to the most ready way of effecting this, the previous exploration of the two fingers of my right hand in the inguinal ring had given me the clue. During this exploration I had noticed that the two exploring fingers readily impinged on the floor of the abdominal wall, at a point just in front of the

inguinal ring, and to the left side of the linea alba. In fact, while in this position they were easily palpated from the outside by the fingers of the left hand.

What I did now, therefore, was to take a scalpel in the left hand, and with it make an incision carefully down on the point indicated by the fingers of the right hand still protruded, by way of the scrotum, through the inguinal ring. Through this incision, the fingers of left hand (held cone-wise) were inserted, and the opening gradually forced to admit the left hand and wrist into the abdomen.

It was now a comparatively easy matter to draw the intestine inch by inch from its abnormal position in the scrotum back again into the abdomen, but not nearly so easy as the mere writing of it would imply. In fact, as each inch or so was gained I found it necessary at the same time, with the fingers of the right hand in the scrotum, to press on the intestine still in the ring, in order to prevent its return into the scrotum.

As to the length of intestine formerly in the scrotum and in this manner regained, I found it impossible to judge. To me, at one time, it seemed almost endless.

Just before the last foot or so was reached, however, it began to thread through easily, and it was then that we were able to see what had been the cause of the violent colic attack at the time the truss was applied, and also to understand the reason for the frequent attacks of colic subsequent to recovery from the first severe pains. A portion of the intestine, six to eight inches long, the last as it happened to have to be threaded through the inguinal ring, was enormously thickened, almost leathery in consistence, and with a mottled dark red and purple colouration, indicating plainly enough that this portion it was which had been bruised and strangulated. The same thought struck both Mr. Conner and myself at once. This portion had evidently been trapped between the truss and the animal's thigh.

Stagnation of the ingesta in this injured portion of intestine, and not, as we had formerly surmised, adhesions, had been the cause of the periodic attacks of colic occurring after removal of the truss.

The question now to decide was: "Is it wise to return this evidently diseased portion of intestine to the abdomen, and then to expect recovery of our patient, or should re-section of the diseased portion and subsequent suturing up of its healthy ends be attempted before concluding reduction?"

Our united opinion was that the foal had now suffered as much at our hands as we could reasonably expect him to endure, having been in deep anaesthesia for nearly an hour, and having during that time been pretty roughly handled. Accordingly the inflamed length of intestine was returned to the abdomen, with the hope that regenerative changes would take place in the wall, and ultimate recovery of the patient result.

Directly this last loop of intestine was returned, the testicle of this side came into sight, rendering a

search for it unnecessary. This was removed with the ecraseur, the stump of the cord returned to the abdomen, and the operation practically concluded. There only remained to suture and to suitably dress.

The wound in the abdominal floor received our attention first. After first dressing the lips with a solution of iodine, and also painting the immediately surrounding skin with the same antiseptic, it was drawn together with interrupted sutures of silk. In doing this it was necessary to use an antiseptic pad of lint laid over the protruding intestines in order to keep them within the abdomen. As the sutures one by one were inserted this pad was gradually withdrawn, and the last sutures safely placed. The inguinal canal was then closed in the same manner, but no protrusion of intestines here interfered with the placing of the sutures. Beyond the difficulty of inserting the sutures in such a situation (an ordinary half-curved needle was used) nothing untoward was to be noticed, and with the placing of the last sutures the anaesthesia was discontinued.

Here the condition of the now empty scrotum may be remarked on. Pulling apart the lips of the incision we had made exposed to view a cavity into which could easily have been placed a football of average size. The interior of the cavity showed clearly enough the inflammatory changes that had been going on. In colour it too, like the injured intestine, was mottled deep red and purple, while the walls of the sac were found to be enormously thickened, in places quite two to three inches. It was debated now whether or not some portion of this sac should be excised. In previous cases, however, I had seen the marvellous manner in which resorption of such thickening occurs directly the cause of irritation is removed. I, therefore, decided to allow it to remain.

The interior of the cavity was now dressed with a solution of iodine, and into it were placed lint pads, each lint pad containing within its folds boracic acid and iodoform in powder. Over these the lips of the scrotal wound were drawn with figure-of-8 sutures, and the last steps in the operation finished. The foal was released from the side-lines and allowed to rise.

He was allowed now to return to his dam, and very shortly after was sucking. From now (July 30th) until August 18th, the progress of the case was uneventful. There was certainly some degree of surgical fever, but never sufficient to occasion us alarm, and never anything in the foal's condition to lead us to expect any other than a favourable issue. At intervals of two days the packing in the scrotum was removed and renewed, each time being held in position by one or two sutures. At the end of a week even this was discontinued, and the cavity simply washed out twice daily with a perchloride solution.

Beyond a little suppuration the wound in the abdominal wall, too, gave no trouble; what suppuration there was being easily kept in check with a syringe and a weak solution of carbolic acid. As

a matter of fact, towards the end of the fortnight following the operation I began to think the foal was going to make an uninterrupted recovery. In this we were disappointed. On August 18th he had another of the colic attacks to which, during the time just prior to operation, we had become accustomed.

This, however, was not alarming, especially as the attendant, pleased with the progress of the case, had become somewhat careless in the matter of dieting his patient. The case quickly responded to a dose of castor oil and ether, while cutting off his "chop," and restricting him for a while to a diet of bran, linseed, and a little grass served to prevent a recurrence of the trouble.

Now, at the time of writing, Oct. 4th, the foal has the appearance of having entirely recovered. The thickening of the scrotum, which at one time was huge, has gradually disappeared, and nothing now remains to indicate operative interference save a small amount of thickening that one can comfortably hold in the palm of the hand. This, too, no doubt, will disappear with time.

Remarks.—I need hardly say that *everything* used in the actual operation was rendered aseptic on the day previous by boiling—even to the supply of lint pads. For these latter I was at one stage of the operation profoundly thankful. That stage was during the suturing up of the abdominal wound, when the intestines which we were endeavouring to confine within their normal bounds appeared to bubble out from the wound with a persistency that was almost diabolical.

On a previous occasion I have drawn attention to the use of such pads when performing an abdominal operation. (Vide "Journal of Comparative Pathology and Therapeutics," Vol. xxi. page 346), and I would add here that anyone who essays to open up the abdomen and afterwards suture without some such means of holding back the intestines, is simply courting failure. I would like to add, too, that while this operation was so entirely successful, such success was due not only to the means employed, but also to the anæsthetist, who kept the patient beautifully under the whole of the time, and to the very able help rendered me by my assistant, Mr. Conner.

STRANGLES OUTBREAKS.

In offering suggestions regarding the origin of an outbreak of this disease, one has both the advantages and disadvantages accruing from the absence of any clearly defined border-line that might mark off the condition during its early stages from an ordinary and non-specific catarrh.

In this respect our clinical knowledge of the disease is not a perfect one, and, before the glands of the intermaxillary space have become infected, none can say exactly when a case that has been diagnosed simply as catarrh ought to be reconsidered as a case of strangles.

By many the glands are looked upon as pre-

dilection seats, and the absence of any glandular changes is taken to indicate the absence of the disease. And this in spite of the fact that before the first case showing suppuration of the glands is observed, either the animal itself, or several others in close contact with it have been showing for some days symptoms of a purulent nasal catarrh.

But very far from being of a primary nature, these glandular changes are distinctly secondary, because it is simply due to their draining an infected area that the glands become involved, and they are no more predilection seats than are the glands of the axilla of man in the case of septic infection of a wound in the hand.

A man may have a poisoned finger without the glands of the axilla suppurating and bursting, and in the same way a horse may have strangles without the glands of the intermaxillary space suppurating and bursting.

Excise these glands altogether, and the horse will still be prone to an attack of strangles! There will then be no abscess formation between the jaws, but there will be the specific catarrh which, if it progresses far enough, will involve other and more distant glands of the body, and produce what is commonly known as "bastard strangles," thereby showing that although the cleaned-out intermaxillary space appeared quite healthy, the initial catarrh was no other disease than strangles.

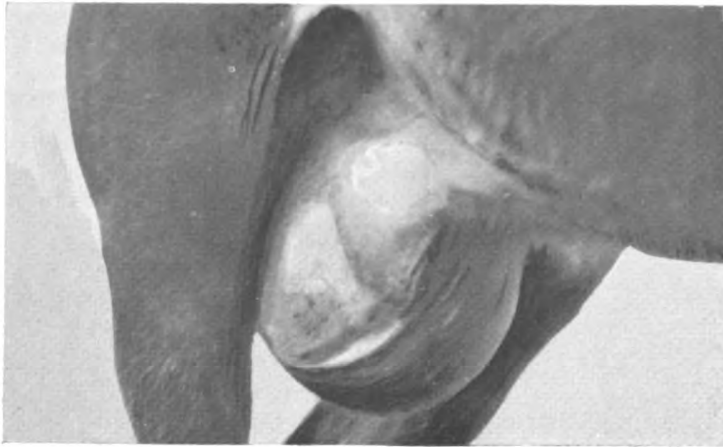
The disease, as it is usually known, with catarrh, and inflammation or suppuration of the glands of the intermaxillary space, almost invariably breaks out wherever a number of young horses are brought together, and the following conditions have been noticed to be important predisposing factors: (a) the animals have had a journey by rail, road or sea; or (b) they have been kept together in large stables or sheds where intermixing is allowed, and the ventilation is bad. (In contradistinction to this, cases are not nearly so frequently met with when young animals are brought in singly, and kept in boxes by themselves).

All endeavour to prevent the outbreak generally fails. The animals may be carefully inspected before commencing their journey, and again at their destination before being admitted to contact with each other, but the usual result is failure to prevent an outbreak.

The layman asks himself how it can be explained, and comes to the conclusion that these clinical examinations have been of a very cursory nature; but the veterinary surgeon says the explanation is either that the animals infected were incubating the disease at the time of inspection without showing any clinical symptoms, or that during their journey one or more of the animals had been exposed to mediate or immediate contagion.

In the absence of proof to the contrary, these two theories are usually accepted as explaining the outbreak; but should one be content with these explanations when others can be brought forward?

Firstly, is it not possible that the causal organism, in a more or less harmless state, has a fairly wide distribution, even to such an extent as to be some-



SCROTAL HERNIA—MR. H. CAULTON REEKS' CASE.



36 hours after injection.



48 hours after injection.

MULE No. 4. The intra-dermo-palpebral test. Note swollen upper eye-lid, the closed eye and the muco-purulent discharge.

MR. W. M. SCOTT'S CASE.

times discoverable in this state in the healthy nasal passage, and all that is necessary to give it a start in a pathogenic direction is something to reduce the vitality of a young animal, *e.g.*, a tiring journey by rail, road, or sea, with all its attendant hardships and discomforts? or,

Secondly, is it not conceivable that these organisms, widely distributed or otherwise, may exist normally in a more or less non-pathogenic condition, and require to be passed from one animal to another before they can become sufficiently virulent to cause serious disease, in much the same way as the virulence of rabies is increased by passage through the rabbit?

This latter theory is the more acceptable because it accounts for the increased prevalence of the disease where many young animals are kept together.

To sum up in a few words, one could say:—*Strangles has almost invariably been observed to follow an attack of an apparently non-specific catarrh, and it is conceivable that this catarrhal stage represents one during which the specific organisms of the disease, while being capable of causing an inflammation of the nasal mucous membrane, are incapable of causing a more serious lesion; and that while this catarrh is being transferred from one animal to another, by a process of passage, the organisms are acquiring a gradual exaltation of virulence which ultimately renders them sufficiently potent to invade, and produce suppuration of, the glands situated in the intermaxillary space.*

The animal with least resistance will thus furnish the first sporadic case, and the virulent strain of organisms, being by this time firmly established, the disease assumes a very contagious nature, passing from one young animal to another with its usual serious consequences.

That adult horses, when brought together under similar conditions, are not so susceptible to the disease, is most probably due to the immunity which they have acquired, either with maturity, or through having experienced a former attack. The latter not necessarily being a complete attack of strangles, but simply a mild catarrh.

T. LISHMAN, Capt. A.V.C.

OBSERVATIONS UPON GLANDERS IN MULES AND THE MALLEIN TEST.

By W. M. SCOTT, F.R.C.V.S., F.R.M.S.

The following observations are put forward not so much with the view of making dogmatic assertions or attempting to upset orthodox principles, as with the sincere desire of classifying some points which we clinicians, at least in this country, are not fully conversant with, and in the hope that the debatable points raised may be discussed by those whose experience in mule practice is such that they can speak with authority. Circumstances have been of such a character as to specially favour me to make these observations, and I feel it is a privilege, as well as a duty that I owe to the profession, so record them at length.

To what extent do the cardinal symptoms of glanders in the mule coincide with those in the horse?

I may at once say the practitioner who by past experience has come to look upon mallein as an almost infallible diagnostic agent, or who places great reliance upon the cardinal clinical data as seen in equines, will be sadly disappointed if he carries these tenets into mule practice.

Glanders in the mule tends to run an acute course, while in the horse a chronic course more or less is the rule. Further, in the mule the disease inclines to become and remain a localised one, while in the horse the deeper and more vital structures are invaded. As glanders affecting the mule confines its ravages to the upper portions of the respiratory tract principally, suffice it for me in drawing comparisons to allude only to a similar state in the horse.

Nasal discharge. In the horse this is usually *unilateral*, in the mule more often *bilateral*.

In the horse the pus tends to an amber colour and is very adhesive. In the mule it is less malignant looking, more muco-purulent, grey, or almost white in colour, and tinged with blood. In advanced cases the discharge is whipped up into foam and often pink in colour, owing to hæmorrhagic effusion.

In the horse respiratory nasal stertor may be present, in the mule always so; and in advanced cases the nasal obstruction is so complete that forced oral respiration takes place. This is partly owing to œdema of the nasal mucosæ, but much more to bloody effusion into the nasal cavities and the accumulation of blood clot, which, by reason of its excessive coagulability, renders the obstruction all the more complete.

Naso-mucosal nodules. In the horse, these, even with the aid of a speculum and torch, are not always visible, and when seen the nodular stage may escape detection, its place being taken by an ulcer which is often covered by an angry-looking tenacious scab.

In the mule, nodular deposits without ulceration or scabbing appears to prove the rule: the former appearing as circumscribed, elevated, hard, grey nodules, about the size of small peas, which show little tendency to ulceration.

Lymphatic glandular enlargement. In the horse a fixed, swollen sub-maxillary lymphatic gland is the rule; in the mule it is the exception, and, even when present, its presence carries with it no significance.

Thermic registrations. In the pre-mallein days clinicians looked upon the thermometer with great reliance in assisting them to detect glandered subjects in a stud, and the interpretations of the temperature chart were fairly constant. In the mule they are very inconstant. I have seen an animal suffering from glanders of a most acute form and the maximum registered temperature only standing at 102.8° F., while, on the other hand, a case apparently running a less acute course has given a temperature 105° F. The thermometer in the mule, therefore, does not appear to be very dependable.

It may worth noting here the normal temperature of the mule varies from 1° to 2° below that of the horse, and this fact may partly account for the unreliable thermic reaction we find after mallein injection.

Systemic disturbances. In the horse these may be slight, absent, or pronounced, depending principally upon the aggressive force of the bacteria on the one hand, and the immunizing body factors on the other.

In the mule these may be absent altogether, and even in very acute cases the temperature, respiration, pulse, may be only slightly removed from normal; while the physiological processes of assimilation and elimination may be quite natural.

Is mallein as a diagnostic agent as reliable in the mule as it is in the horse?

This question can only be answered by an emphatic negative, and for this negation there must be some reason or reasons.

The horse and the mule are one and the same species, although the latter is a lateral branch of the former. I think a solution to this question is to be found not in the mallein alone, but in both mallein and mule, and to which belongs the greater credit in the reaction failure I am not in a position to say, although I incline to the opinion it is the mule itself.

(a) Mallein is a potent biological product derived from the bacillus mallei, which when injected into a glandered subject produces a characteristic reaction. This reaction may be due to bacterial proteins, to endotoxins, or to both. The reaction is local, focal, and thermic, and as such one must view the antigenic action of mallein in the light of a vaccine -- at least the analogy is very close indeed.

It has been suggested that mallein is toxic. In the proper acceptation of the term, mallein is not toxic in its action. When injected into a glandered subject a remarkable degree of hyper-susceptibility takes place and it is the underlying anaphylactic processes which are responsible for the reactions noticed.

To prove mallein is not truly toxic, I have injected as much as 8 c.c. into a non-glandered mule without ill effect. If we accept mallein in the light of a vaccine it appears to me that, if we desire to obtain the best potential results in mule practice, mallein should be procured from bacilli whose habitat originally was the body of the mule and not the horse.

We must remember the mallein in glanders as well as the tuberculin in tuberculosis possesses a high specificity. If mallein is brought into contact with the skin or the mucosæ which is, as already suggested, a bacterial protein, and the corresponding antibody is to be found in the body-fluids such as one expects to find in a glandered subject, the protein will be digested and the poisonous product combined with the endotoxin will permeate the local tissues, producing the characteristic local reaction. Fortunately this protein-antibody reaction is highly specific; in truth, it is upon this specificity, and nothing less, that the real diagnostic value of such

antigens as mallein and tuberculin depend. I therefore maintain that this phenomenon is so pronounced in its effects and exacting in its principles that the antigen in use for the mule should come from a mule source.

To support this view take for example the streptococcal antigen. Every immunizer knows there are many strains of streptococci, at the one end of the scale we find the very pathogenic and aggressive groups, and at the other representatives of an almost non-pathogenic class. Now if a vaccine was made from the bacteria belonging to the non-pathogenic group and injected into an animal suffering from a bacterial invasion belonging to the pathogenic class, the reactive results and the consequent therapeutical value of the antigen likewise would be nil. Here again a high degree of specificity exists, and it is upon this that an auto-genous vaccine possesses a higher therapeutical value than a stock vaccine.

(b) The mule, compared with the horse, enjoys, speaking generally, a greater immunity to bacterial invasion. To this one must attribute a more complete and a more active immunizing and protective mechanism.

No sooner does an animal become invaded by pathogenic bacteria than the protective forces are brought into increased activity. The body cells and the immune bodies attack the invaders, and if the aggression of the latter is limited and eventually thwarted recovery will follow. Speaking generally, a localised bacterial infection, if kept as such, suggests that the protective forces have got the aggressors well in hand; while, on the contrary, a generalised infection suggests a breakdown in the immunizing mechanism. Reasoning thus, the mule is more resistant to glanders than the horse, for in the former we find the bacterial invasion seldom gets beyond the upper air passages, at least to play permanent havoc; while in the horse the bacillus mallei carries its destructive work into the parenchyma of deep and vital organs.

No sooner, then, do the bacilli enter the body, either local or focal, than the cellular receptors are actively cast off to fasten on to free toxins. Now in a glandered foci large numbers of sessile receptors are to be found which would appear to possess greater affinity for the antigen (mallein) than do the receptors belonging to normal cells found in glanders-free animals, and the more susceptible the cells and receptors are to the antigen the greater the reaction.

To obtain, therefore, a diagnostic mallein reaction in the mule, it appears to me we must have a more specific antigen on the lines indicated, but I am not aware that such a mallein can be procured in this country.

The next alternative is to make it more potent by increasing the dose, and this we have put into practice by giving 2 c.c. doses.

I have tested in all 2666 mules with mallein. The first thousand had 1 c.c. as a dose. One of this number which, with the others, gave negative results, showed certain symptoms suggestive of

glanders and was isolated for observation. Ten days later it was tested with 2 c.c. mallein, with the following results:—

Initial Temp.	12th	15th	18th	24th hour after injection.
100.1 F.	102°	103.1°	104.4°	104°

The local reaction was $5 \times 7\frac{1}{2}$ inches.

I am quite convinced that the 1 c.c. dose of mallein in mules is a useless quantum, and that the interpretations after the injections are not only useless but dangerous.

Further, absolute reliance should not be placed upon any one reaction to the exclusion of all others. The following four cases which proved to be glanders are instructive upon point of dosage and the variability of the reactions.

Mule No. I. Injected 1 c.c. mallein.

Results. Local, thermic, and ophthalmic, *negative*.

Injected 2 c.c. mallein 10 days later.

Results. Thermic, *positive*: local and ophthalmic, *negative*.

Mule No. II. Injected 1 c.c. mallein.

Results. Local, thermic, and ophthalmic, *negative*.

Injected 2 c.c. mallein nine days later.

Results. Local, *positive*: ophthalmic and thermic, *negative*.

Mule No. III. Injected 1 c.c. mallein.

Results. Local, thermal, and ophthalmic, *negative*.

Injected 2 c.c. seven days later.

Results. Local, *positive*; ophthalmic, *positive* (slight); thermic, *negative*.

Mule No. IV. Injected 2 c.c. mallein.

Results. Local and thermic, *positive*: ophthalmic, *negative*.

Out of the total number of mules tested 993 had 1 c.c. mallein injected subcutaneously only. The double test was applied in 1451, of which 441 had 1 c.c. mallein injected subcutaneously, and 1010 had 2 c.c., while, in addition, 222 had the *Intra-dermo-palpebral* test applied.

As regards the ophthalmic test, I should like to emphasise the following points:—Out of the 1673 eyes examined in the course of applying the ophthalmic test I found (a) in 17.5% a catarrhal discharge from one or both eyes; (b) in 5% the membrana-nictitans and conjunctiva was pigmented black, and in 6.5% the pigment covered half the conjunctiva; (c) in 22% the conjunctival colour of one eye was much deeper than in its fellow, and in some instances the degree was most marked; the membrane of one looking like that of horse with enteritis, while the other was comparatively pale. Further, the membrane of the left eye was invariably the deeper colour of the two.

This phenomenon I have never seen in horse practice. It is needless to point out that these three conditions greatly hamper the clinician in his endeavour to interpret the ophthalmic reaction in mules.

Is glanders in the mule a curable disease? and if so does the antigenic action of mallein rise to the standard of a curative vaccine?

To give a direct answer to this question a larger experience in mule practice than the writer possesses is required. I will therefore content myself by recording a case which came under my notice, the merits or demerits of which must be judged for what they are worth.

Mule No. IV. Arrived with a bilateral nasal discharge somewhat suspicious looking, both sub-maxillary lymphatic glands swollen.

He was immediately placed under the mallein test and gave a *positive* local reaction, a very slight ophthalmic reaction, and a *negative* thermic reaction.

For the first three days after injection the mule was very sick and off his feed, while the nasal discharge was greatly increased and non-glutinous. He was isolated and kept under observation.

In a fortnight the animal's condition was much improved, while the nasal discharge had nearly disappeared.

In a month, dating from the time of the first testing, he was tested again, and in addition this time the intra-dermal test was applied. The results were ophthalmic *negative*, subcutaneous and thermic *very positive*: *intra-dermo-palpebral* as the attached photographs will show.

Again, it is worthy of notice—following the mallein an increased nasal discharge took place which lasted nearly a week; after which it gradually subsided and disappeared.

Fifty-five days later he was again tested—triple test—this time with *negative results* all round. The mule now is in the best of condition and health.

Finally, I append details of 22 mules isolated from over 900 mules at the depot which when tested gave variable *slight reactions*, and which were isolated for the purpose of testing again later.

August 12th, 1915.

No.	Pre-injection Temperatures.		Post-injection Temperatures.			
	100.2° F	102° F	12th hr.	15th hr.	18th hr.	24th hr.
1	100.2° F	102° F	101° F	102° F	101° F	102° F
2	99.7	99	101	99	101	101
3	99.8	99.3	99	99.3	100.4	100
4	101	100.4	100.2	100.4	101	99.8
5	100	100.5	100.2	100.5	100	99
6	101	100.1	100	100.1	100	100
7	99.9	100	99.8	100	99	99.8
8	100.2	100.4	99.9	100.4	100	100
9	100.1	100	99	100	99	99.1
10	100	101.3	100	101.3	100	100
11	100.1	101	100	101	99.7	99.5
12	99.9	100.3	100	101.3	100.2	101
13	99.7	101.2	98.8	101.2	100.1	101
14	98.8	101.3	99	101.3	100	100
15	99.1	101	99	101	100	101
16	99	100.9	99.8	100.9	100	99
17	99	100.8	99	100.8	99	99.9
18	99.7	100.2	99.8	100.2	100	99.3
19	99.8	100.3	99.8	100.3	99	100
20	98	98.9	100	98.9	99.3	99
21	99	99.8	99.9	99.8	100	100
22	100	100.2	100	100.2	100.1	100

In addition to mule No. 4, mule No. 21 was the only one which gave a suspicious reaction, and that local, the dimensions being 5 in. \times 10 in. This

mule was tested 55 days later with complete negative results.

Condition of sub-maxillary glands and the nasal discharge prior to testing;—

Enlarged sub-maxillary glands.	Nasal discharge.
No. 3 Unilateral.	Bilateral.
4 Bilateral	"
5 Nil	Unilateral.
6 Unilateral.	"
10 "	"
12 "	"
20 "	"
8 "	nil.
11 "	"
19 "	"

No. 1 & 2 Mule Depôts, Somerset.

ROYAL VETERINARY COLLEGE, LONDON.

LIST OF MEDALS, CLASS PRIZES, ETC., AWARDED AT THE OPENING OF THE SESSION, 1915-16.

COLEMAN PRIZES.—Silver medal: Mr. T. J. Bosworth; Bronze medal: Mr. W. R. McKinna; Certificate of merit: Mr. R. H. Penhale.

CENTENARY PRIZES.—Class A: Mr. W. A. Williams; Class B: Mr. T. J. Lewis, Mr. F. C. Scott, aeq.; Class C: Mr. A. Carter; Class D: Mr. T. J. Bosworth.

ROYAL AGRICULTURAL SOCIETY'S MEDALS.—Silver medal: Mr. R. H. Penhale; Bronze medal: Mr. W. R. McKinna.

RALLI PRIZES IN PRACTICAL SURGERY.—1st Prize: Mr. W. Shipley; 2nd Prize: Mr. R. H. Penhale; 3rd Prize: Mr. W. R. McKinna.

Clinical Prizes.—Class A—1st Prize: Mr. J. McCunn; 2nd Prize: Mr. C. V. Dayus; 3rd Prize: Mr. G. N. Bushman.

Class B.—1st Prize: Mr. K. A. Miles; 2nd Prize: Mr. T. Le Q. Blaupied; 3rd Prize: Mr. H. Cooper.

Class C.—1st Prize: Mr. S. C. J. Bennett; 2nd Prize: Mr. G. F. Watkins; 3rd Prize: Mr. D. A. Gillmor.

Class D.—1st Prize: Mr. W. A. MacGregor; 2nd Prize: Mr. W. R. McKinna, Mr. G. E. Oxspring, aeq.; 3rd Prize: Mr. W. Shipley.

Class Prizes.—Class A.—Chemistry and Toxicology—1st Prize: Mr. R. L. Cornell; 2nd Prize: Mr. E. T. Fern; Practical Chemistry—1st Prize: Mr. R. L. Cornell; 2nd Prize: Mr. C. V. Dayus; Biology—1st Prize: Mr. W. A. Williams; 2nd Prize: Mr. R. L. Cornell; Minor Anatomy—1st Prize: Mr. W. A. Williams; 2nd Prize: Mr. J. McCunn.

Class B.—Anatomy—1st Prize: Mr. T. J. Lewis; 2nd Prize: Mr. F. C. Scott; Physiology—1st Prize: Mr. S. H. Pettifer; 2nd Prize: Mr. H. C. Driver; Histology—1st Prize: Mr. S. H. Pettifer; 2nd Prize: Mr. F. C. Scott.

Class C.—Pathology—1st Prize: Mr. D. A. Gillmor; 2nd Prize: Mr. G. C. Taylor; Hygiene—1st Prize: Mr. A. Carter; 2nd Prize: Mr. D. A. Gillmor; Materia Medica—1st Prize: Mr. A. Carter; 2nd Prize: Mr. D. A. Gillmor.

Class D.—Veterinary Medicine—1st Prize: Mr. T. J. Bosworth; 2nd Prize: Mr. R. H. Penhale; Surgery—1st Prize: Mr. R. H. Penhale; 2nd Prize: Mr. T. J. Bosworth.

ARMY VETERINARY SERVICE

We have received the following announcement officially for publication:—

A proposal, whereby Lieutenants A.V.C., T.F., and Special Reserve will be promoted Captain after twelve months mobilized service, with effect from the dates upon which such officers have completed, or will com-

plete twelve months mobilized service, is receiving the earnest consideration of the responsible authorities.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Oct. 1.

REGULAR FORCES. ARMY VETERINARY CORPS.

Appointment of W. F. Morton to be temp. Lieut. is dated Aug. 27, 1914, and not as stated in *Gazette* of Sept. 24, 1914.

Temp. Lieut. W. F. Morton to be temp. Capt. Dated Aug. 27.

To be temp. Lieut.:—G. Whitehead. Dated Aug. 31.

Oct. 4.

Temp. Hon. Lieut. E. G. R. Fairholme to be a Dep. Asst. Director of Vet. Services (graded for purposes of pay as a Staff Capt.), and to be temp. Capt. while so employed. Dated Oct. 5.

Temp. Lieutenants to be temp. Captains:—

R. T. Davis. Dated Aug. 7.

J. Hill. Dated Sept. 7.

T. Hogg. Dated Sept. 11.

R. J. Little, H. J. Allen. Dated Sept. 23.

To be temp. Capt.:—J. Purdy. Dated Sept. 15.

To be temp. Lieut.:—W. L. Flanagan. Dated Sept. 21.

To be temp. Qmr. with hon. rank of Lieut.:—W. H. Mawdsley. Dated Oct. 1.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Oct. 1.

To be Capt. (temp.):—W. G. Evans. Dated March 1.

Lieuts. to be Captains:—

C. A. A. Ewin. Dated Aug. 8.

H. McVean. Dated Sept. 5.

Lieut. A. Scotson relinquishes his commission on account of ill-health. Dated Oct. 2.

The date of appointment of Lieut. W. Wordley is Nov. 19, 1914, and not as stated in *Gazette* of Dec. 25, 1914.

TERRITORIAL FORCE RESERVE.

Oct. 1.

Announcements regarding Capt. W. G. Evans which appeared in *Gazettes* of Feb. 26 and Mar. 1 are cancelled.

OBITUARY.

Vet.-Major GERALD HERBERT FENTON, late A.V.C.

Graduated, N. Edin.: April, 1874.

Major Fenton died on Oct. 2nd, aged 63.

Capt. JOHN STORIE, A.V.C. (T.F.), East Linton, Prestonkirk. 1875, N. Edin.: April, 1880.

Capt. Storie's death occurred on Oct. 4th, aged 59.

Professor EDWARD A. MINCHIN, F.R.S., Professor of Protozoology in the University of London, died at Selsey on Sept. 30. He had been ill for six weeks, and went to Selsey to pick up his strength in view of a presidential address which he was to have delivered at Manchester. He was vice-president of the Zoological Society, a member of the Sleeping Sickness Commission in Uganda in 1905, and was Demonstrator of Comparative Anatomy at Oxford from 1893 to 1900.—*The Daily Telegraph*.

PARLIAMENTARY.

In the House of Commons.

BOARDING OUT OF ARMY HORSES.

Mr. PETO asked the Under-Secretary for War whether, in view of the expense to the country of maintaining vast numbers of horses in the various horse-camps and the difficulty of keeping them in health in winter, he would consider the adoption of a system of boarding them out among selected farmers under the superintendence of county committees, and thus assist in food production?

Mr. TENNANT: The system of boarding out remount horses with farmers and others already obtains to a considerable extent on terms ranging from "meat for work" to 25/- per week according to the condition of the animals and the accommodation provided, and many of these horses are at work. General Officers Commanding-in-Chief will be directed to extend the system of issuing horses on "meat for work" terms as far as is possible and expedient.

As to the suggested appointment of County Committees, there were in the employment of the Remount Department many local gentlemen of "horsey" propensities with knowledge of horseflesh and horse-keeping, and it was not considered necessary in those circumstances which prevailed very widely all over the country to adopt Mr. Peto's suggestion.

VETERINARY DISPENSARIES.

Mr. BIRRELL, replying to a question asked by Mr. French, stated that the Irish Department of Agriculture had received a copy of a resolution passed by the County of Wexford Committee of Agriculture asking that legislation should be promoted with a view to the establishment of veterinary dispensaries. In view of the state of public business, it was not possible at present to entertain the suggestion.

ALLOWANCE ON MOTOR SPIRIT.

In the House of Commons, on Sept. 29th, in the discussion of Budget Resolutions, on the motion for the increase of Customs duty on imported motor spirit by 3d. per gallon:

Mr. J. O'CONNOR: I want to say a word or two on this Resolution in order to suggest that it would be a fitting opportunity to extend a concession to a very deserving class of persons similar to that which has been made to the medical profession. I think it is the eighty-sixth Section of the Act, 1909-10, which makes a concession on—

"Motor spirit used to supply motive power to a motor car kept by a duly qualified medical practitioner while it is being used by him for the purpose of his profession."

There is another class of professional man who is probably in the same category as the medical practitioner that this Section is intended to benefit—I allude to the veterinary surgeon. No doubt a very good case was made for the reduction of this tax to the medical profession, because medical men are called upon to assuage human suffering and have to go long distances to attend patients suddenly attacked with some disease or other. I know this is the case in Ireland, and I think it is a right and proper thing to allow this reduction, and it was so considered by this House in 1910, when the members of the medical profession were given the benefit under that Act. Every argument that was used with regard to human suffering in order to give this benefit and concession to the medical profession may likewise be used on behalf of the veterinary surgeon. It is not because the object of the suffering is a dumb animal that the sympathies of the human heart are not excited as much as in the case of human suffering. Therefore I submit to the House that if there was a good reason in the past for making this concession to the medical profession, those good reasons equally apply to the case of the veterinary surgeons, who are called upon, very often late at night, to go long distances in order to administer to the wants of poor suffering dumb beasts. I submit that this occasion should be taken to remedy what I consider a mistake in the Act of 1909-10. Let me also point out to the House that the veterinary surgeon is affected by the Motor Tax and by the use of motor vehicles to a much greater extent than the medical

profession and in a manner in which that profession is not affected at all. The veterinary surgeon has been affected in his business to some extent by the destruction of horse traffic and horse haulage. There are less horses than there used to be, and there will be less use for them in the future, and consequently less demand for the veterinary surgeon with regard to horses. That being so, I think this profession is entitled on that account to some consideration from this House. I do not think I shall make this appeal in vain. It is certainly a case worthy of the consideration of the Chancellor of the Exchequer, and I hope that he will avail himself of this opportunity of remedying what I believe to have been a mistake in the past.

Mr. McKENNA: My hon. and learned Friend the Member for North Kildare (Mr. John O'Connor) will appreciate that if his views were adopted by the Government—I express no opinion on this point—they could not be adopted now on this Resolution, and it will have to be done subsequently in the Bill.

I think the hon. and learned Member's proposal would be much more appropriate as an Amendment to the Clause of the Bill dealing with this matter. We should then have our hands quite free to discuss this question when we get to the Bill. I say that without intending to convey any reply to my hon. and learned Friend, either positive or negative, with regard to the proposal he has made. I will, however, take this opportunity of saying that when we come to the fourteenth Resolution I shall propose to omit it.

Sir F. BANBURY: I think the suggestion of the hon. and learned Member for North Kildare is a very good one, and if he accedes to the suggestion made by the Chancellor of the Exchequer I shall be very pleased to support him at the proper time when he moves his Amendment to the Bill.

On the motion for an increase in the Excise duty of 3d. per gallon on motor spirit (Allowance): Resolution

14. "That the temporary increase of the duties on motor spirit shall not operate so as to increase the allowance or repayment in respect of the duty now made to persons using motor spirit for certain purposes."

Mr. McKENNA: I beg to move, "That the House does not agree with the Committee in the said Resolution."

If this Resolution be now admitted, then automatically, in accordance with the provisions of the Act, the industries and the professions to which the abatement of half the Spirit Duty was allowed will still be entitled to that abatement.

Unless this Resolution is negatived, we could not hereafter consider freely the various deductions and modifications of the duty as it might affect particular trades and industries.

Question, "That this House doth agree with the Committee in the said Resolution," put, and negatived.

Dear Sir,—I think the veterinary profession should be very grateful to Mr. John O'Connor (M.P. for North Kildare), for his action, in the matter of rebate on motor spirit for veterinary surgeons. Report of the debate is enclosed.—Yours faithfully,

Naas.

W. T. M. BROWNE, M.B.C.V.S.

Sir,—As many practitioners may have overlooked the fact that the Chancellor of the Exchequer gave encouragement to Mr. John O'Connor, M.P. for Kildare, when on the 29th ult. he asked to have veterinary surgeons placed on the same basis as the medical profession in the matter of the motor spirit tax, and I think it well to exhort each V.S. to at once approach the M.P. for his district asking them to support the amendment to which Mr. McKenna has promised a hearing when it will come up later on in the Finance Bill.

It would be erroneous to expect that M.P., and especially the Chancellor of the Exchequer, should be conversant

with our position, hence the necessity of posting them up on some strong points,

Amongst the many reasons for our claim I would suggest the following as going to show that we are as well entitled to the concession as the medical profession—if not more so.

(1) Our fees are more scanty, and now that farmers are about to be more generally taxed, the time is not opportune to seek from them extra payment in order to meet our increased cost of living, and a strike is out of the question—it would be most unpatriotic under present circumstances.

(2) Owing to sounder horse breeding there is not now one horse to be fired to the two hundred there were prior to the sound horse breeding scheme, which our profession was the first to advocate the introduction of.

(3) Motor traction has dealt us a very severe blow, the consequence being that our practice is chiefly confined to cattle, and as the latter are the farmers' principal stronghold, to meet the many needs, we deserve encouragement in our endeavours to combat the numerous ills to which they are prone, and thus promote the interests involved.

The decrease in the number of students attending Veterinary Colleges in latter years plainly shows the diminished prospects of the profession, and the necessity of the avoidance of anything which might tend to cause a dearth of veterinarians in the future.

Would it not be gratitude with a vengeance, for instance, to tax the motor spirit used by patriotic men who have voluntarily engaged, without fee or reward, to carry on the practices of veterinary surgeons who have gone to the front to "do their little bit?"

We all know how often our work is given free of charge to poor owners of animals.

I trust that before it will be too late members will exert themselves by speaking or writing M.P.—Yours truly,

Athy. 4th Oct.

JOHN HOLLAND.

Patent Medicines.

Sir Henry Norman, M.P., chairman of the late Select Committee on Patent Medicines, has received from Dr. Cox, medical secretary of the British Medical Association, the following letter:

"At the recent annual representative meeting of this Association a report was presented by the Council of the Association detailing the recommendations of the Select Committee on Patent Medicines.

"The meeting passed the following resolution, which I was instructed to send to you:

That the representative body place on record its satisfaction with the recommendations of the Select Committee on Patent Medicines, and instruct the Council, as soon as it considers the time opportune, to take all necessary steps in pressing for legislation on the lines of the report.

"The meeting felt that the report of the committee was a very distinct advance on anything which has been done in connection with this subject previously, and was of the opinion that the report would be extremely valuable, and that the public and the medical profession owed a debt of gratitude to the Select Committee and to its chairman. I am to express the hope that when we get back to normal times we may have your support and influence in pressing upon the attention of Parliament the very serious evils which the report disclosed, and the necessity for dealing with them drastically on the lines therein suggested."

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. †		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended October 2	4	5					12	31	1	45	125
Corresponding week in											
1914 ...	11	11			1	1	†	†		115	692
1913 ...	9	11			1	1	17	22	2	86	857
1912 ...	10	10		2	2	4	19	25	3	26	409
Total for 40 weeks, 1915	446	508			36	66	||640	||1385	165	3209	14045
Corresponding period in											
1914 ...	568	623	22	108	82	250	†1530	†2642	155	3272	31760
1913 ...	420	464			122	299	2016	4021	136	1904	25344
1912 ...	604	685	91	635	141	260	2434	5214	180	2371	31406

† The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, October 5, 1915

† Counties affected, animals attacked:

|| Figures for twenty-seven weeks only.

IRELAND.	Week ended Oct. 2	...	...	...	...	...	Outbreaks 1	5	4	20
Corresponding Week in {	1914 ...	...	...	...	...	...	1	2	2	8
	1913 ...	...	...	...	...	...	3	3	1	1
	1912 ...	...	...	1	1	...	2	4	4	15
Total for 20 weeks, 1915		...	1	1	1	3	59	320	197	1130
Corresponding period in {	1914 ...	1	1	76	957	68	409	163	845	
	1913	105	397	117	543	
	1912 ...	3	3	30	264	55	270	190	1532	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Oct. 4, 1915.]
 Note.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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VOL. XXVIII.

THE COUNCIL MEETINGS.

Last week's Council proceedings were quiet; but the report contains much interesting material. As usual nowadays, the attendance was very small, and action upon the Registration Committee's report had to be postponed—the numbers requisite for the restoration or removal of names were not available.

We do not remember a single instance of this happening before the outbreak of war; but this is the second time it has happened since.

The financial problem forms the outstanding feature of the report. The attempt to obtain a grant from the Treasury has definitely failed; and we cannot now hope for the passage of our Bill during the war. The resultant position and prospect may be best summarised by quoting the Treasurer, who, while pointing out that we are now spending some £500 more than our income, remarked that "if the present condition of affairs goes on, we shall last between three and four years." Almost as a last resource, a Committee has been appointed to consider whether any further reduction of the College expenses is possible. Too much must not be hoped from this; especially as whatever advantage it does bring us will probably be accompanied by corresponding disadvantages. Undoubtedly retrenchment could be effected in some directions—such as holding examinations at one centre, or partial or total discontinuance of prosecutions—but the whole question of expenditure has already been gone into so carefully that it is questionable if any more economy is practicable without impairing the efficiency of the College. Further, whatever retrenchment may be found practicable can at best only postpone the evil day a comparatively short time. The Council may yet be forced to call for voluntary subscriptions as the only means of staving off bankruptcy till the Bill passes.

One retrenchment has been found, however, the Council have dispensed with the services of Parliamentary agents. Parliamentary conditions render this practicable to-day; but the step would have been most detrimental to our interests before the war, and will require reconsideration soon after it is over.

There are quite a number of more or less important points which should be noted by practitioners. One is the correspondence regarding the petrol tax, concerning which the Parliamentary Committee urge that "it is very important that members of the profession should enlist the interest of their Members of Parliament." It will be seen that the Council are doing what they can in the matter; something may be done by every member also.

A more important matter is the report of the War Emergency Committee. All members will be

interested to read this; and most will probably agree that the encomium passed upon the President's action was well deserved. The President's hint that the question "requires patience and time" is worth taking to heart.

The Regulations for the Diploma in Veterinary State Medicine are now adopted as bye-laws of the College; but their action is suspended for the present—partly on account of the war, partly for financial reasons.

Lastly, the Steel Memorial Medal has once more been awarded; and all who have qualified at Camden Town in the last twenty-seven years—no small proportion of the whole profession—will be glad that it has fallen to Prof. Macqueen.

ANGLO-FRANCO-BELGIAN VETERINARY RELIEF FUND.

After the Council meeting, a meeting in connection with this Fund was held—a meeting which was the inception of an English branch of a movement which originated in France. It is important to note that its main object is not palliative, but is the accumulation during the war of funds for the repatriation and re-establishment of Belgian and French veterinary surgeons who have lost their homes and practices through the German invasion. We print the report; and probably all English members will read it with the same thought. We, in England, in various directions, have all lost something through the war. But our losses are a mere trifle compared with those of Belgians and Frenchmen.

SUCCESSFUL TREATMENT OF INFECTIVE CATARRH OF THE EQUINE RESPIRATORY PASSAGES WITH NEO-SALVARSAN.

Barthel has published some observations of this treatment (*Schweizer Archiv.*, 1915). He was led to attempt it by the good results which other authors have obtained with Salvarsan in infective catarrhs of the upper respiratory passages. He, therefore, tried Neo-salvarsan upon a batch of fifteen horses affected with infectious catarrh, leaving four other patients, more slightly affected, without treatment, as controls. The symptoms of the disease were very characteristic, so that it was possible to exclude strangles and equine infectious pneumonia from the diagnosis. The cause of the affection remained unknown; but, as it was certainly of infective nature, the animals were immediately isolated.

Barthel used a dose of $4\frac{1}{2}$ grammes of Neo-salvarsan, dissolved in 100 c.c. of distilled water and injected intravenously. The injections were made at times varying from one to five days after the first appearance of symptoms of disease. From twelve to ninety hours after the injection the fever diminished and an improvement of the general condition appeared. The author regarded the result as proving the treatment to be highly efficacious. Horses which were not injected, or were

injected late, continued to have irregularities of temperature, pulse and respirations for some time.—(*La Clinica Veterinaria*).

A SIMPLE METHOD OF SECURING FOR CRYPTORCHID AND SIMILAR OPERATIONS.

Franz Weischer, of Barmen, describes the following simple method of securing the horse with the inguinal region exposed for such operations as castration.

The apparatus required are ordinary hobbles, and a rope about twelve metres long. It is advantageous that the rope should be thick and soft.

The horse is hobbled and thrown on his side; and the rope is attached to the fetlock of the uppermost hind limb. The rope is then passed round the horse's back *from above*, the foot is released from the hobbles, and the rope is drawn upon until the limb is strongly flexed. While the limb is maintained in this position, the rope is drawn through a ring of the hobble and then passed again round the body *from underneath*, drawn tightly till the three hobbled limbs are flexed, and repeatedly wound round the fetlock of the strongly flexed uppermost hind limb. Finally, to still further immobilise the upper hind limb, the rope is passed several times in figure of eight fashion from the fetlock round the metatarsus, between it and the tibia, round the back of the tibia, and then back again.

The horse can now be propped upon his back for operation. The hobbled hind leg is thus secured somewhat as both hind limbs are in throwing with the ordinary castrating rope, only more abducted. The unhobbled one stands out from the body abducted and immobilised at its maximum natural flexion. The inguinal region is thus very effectively exposed.

The method is especially suitable for the castration of cryptorchids, the spaying of mares by the inguinal canal, the operations for inguinal hernia and scirrhus cord, and all castrations. Weischer has used it on about fifty horses without any disadvantageous result, and is well satisfied with it. He has used it especially for cryptorchid operations, and also for the other operations mentioned above.—(*Berliner Tier Woch.*)

THE PRESENCE OF STRONGYLUS ARMATUS IN THE TESTICLE OF A CRYPTORCHID HORSE.

Attilio Mensa records the following case, which is exceptional in more respects than one.

The subject was a four-year-old horse affected with double abdominal cryptorchidism, which was ascertained before operation by rectal exploration. The left testicle was found high in the flank region, not far from the transverse process of the last lumbar vertebra. The right one was lying on the floor of the abdominal cavity, a little in front of the right internal inguinal ring. It should be noted that examination of the horse's faeces, both before and after the operation, revealed numerous eggs of strongyles.

A strongyle was found in the right testicle, situated in the *parenchyma* of the organ. The right testicle was fairly well developed, but flaccid; and histological examination failed to reveal sper-

matozoa in it. The left testicle was considerably atrophied, and it also appeared to be destitute of spermatozoa.

The worm had excavated a channel which ran transversely to the testicular mass, and in the centre, or nearly so, of its parenchyma. This channel was distinctly limited by a fine membrane of connective tissue, which was slightly reddened by a diffuse but not serious hæmorrhagic infiltration. It showed minute apertures in direct communication with the testicular parenchyma, and contained a small quantity of serous liquid which surrounded the worm.

The worm was living and very lively when extracted, but died soon afterwards. It was not difficult to recognise as an equine sclerostome, and was afterwards identified as such by Prof. Perroncito. It was a female, and measured 40 millimetres in length. It might be considered almost mature, as the digestive and genital organs were complete, with the single exception that no ova were present. The head had a normal development, but no teeth were visible, and the parasite was therefore classed as a specimen of *Sclerostomum edentatum*.

Mensa remarks that, so far as he knows, this is the first case of an armed strongyle in the testicle of a cryptorchid horse which has been recorded in Italy. He suggests that this is perhaps due to the fact that equine cryptorchidism is less common in Italy than it is in other regions of Europe, especially the northerly ones. He also repeatedly emphasises the fact that the parasite was almost mature and of determinate sex. Usually, when found in an extra-intestinal localisation, the parasites are in the agamous condition.—(*La Clinica Veterinaria*.)

[The statement of the rarity of equine cryptorchidism in Italy is interesting; and the fact is not easily explained.—*Transl.*]

LEUCÆMIC TUMOUR OF THE SPLEEN IN A HORSE.

H. Schindler and W. Schmidt have reported the following case, which, as leucæmia is not often observed in horses, they consider worthy of record. (*Tierärztl. Zentralbl.*). The observation consists of the naked-eye post-mortem findings with regard to an apparently healthy Hungarian horse. (The age, and the circumstances or cause of death, are not stated.—*Transl.*). The spleen was very greatly enlarged; it was 94 centimetres (= about 37.6 inches) long, 44 centimetres (= about 17.6 inches) broad, and 11 centimetres (= about 4.4 inches) thick. It weighed 18 kilogrammes (= about 39.6 lb.). Its colour was a pale reddish upon the surface, and a raspberry red upon section. Its consistence was fairly firm.

The liver and kidneys were also enlarged, the liver weighing 13 kilogrammes (= about 28.6 lb.). The lymphatic glands were rather swollen, and had undergone succulent softening. The bone marrow was pale red. No great alteration could be observed in the blood, beyond a pale red colour and a slow coagulability.—(*Berliner Tier. Woch.*)

W. R. C.

Royal College of Veterinary Surgeons.

QUARTERLY MEETING OF COUNCIL.

A Quarterly Meeting of Council of the Royal College of Veterinary Surgeons was held at the College, 10 Red Lion Square, Bloomsbury, W.C., on Friday, 8th October, Mr. FRANK W. GARNETT, J.P., President, occupying the Chair.

The following were present: Mr. Banham, Professor Bradley, Messrs. Carter, Clarkson, Dunstan, Lawson; Sir John M'Fadyean, Mr. McKinna, Prof. Mettam, Messrs. Mulvey, Price; Major-Gen. Pringle, C.B., D.S.O.; Prof. Shave; Mr. Slocock; Sir Stewart Stockman; Major-Gen. H. Thomson, C.B.; Mr. G. Thatcher (Solicitor), and Mr. F. Bullock (Secretary).

Apologies for absence. The SECRETARY announced that apologies regretting their inability to attend the meeting had been received from Messrs. Barrett, Brittlebank, Howard; Prin. McCall; Messrs. Packman, Share-Jones, Shipley, Trigger, and Wharam.

Minutes. The minutes of last meeting, which had been printed and circulated, were taken as read, and confirmed subject to a verbal alteration.

Obituary. The SECRETARY read the obituary list.

Mr. MULVEY: Among the names just read out are those of two representative men, both of whom have occupied positions on this Council, and both of whom were personal friends of my own; I refer to Messrs. Hartley and Wartnaby. From time to time one is called upon to move votes of condolence with the members of the families of those who have gone from amongst us. Both of these gentlemen occupied prominent positions; they were honoured and respected by the profession generally, and particularly by us with whom they came in contact. I do not think I need say more than that I move that a vote of condolence be sent to their surviving relatives.

Mr. LAWSON: I shall be glad to second that, as I knew both of these gentlemen well.

The resolution was carried in silence, all present up standing.

ADMISSIONS TO MEMBERSHIP.

The SECRETARY read the following list of members admitted since the previous meeting of the Council:

London College. Messrs. Thomas John Bosworth, Reginald Dalling, Thomas Alexander Dobie, Wm. Alister Macgregor, Wm. Robert McKinna, Harry Vincent Mercer Metivier, George Ernest Oxspring, Richard Hugh Penhale, Herbert Charles Rockett, William Shipley, Roger John Stow, Philip Robert Turner.

Edinburgh College. Messrs. James Edgar, William Harley, William Hay, Charles Kinder Lomas, Robert Kyle Porteous.

Dublin College. Messrs. John Arthur Brew, Joseph Michael Culhane, John Joseph Fitzsimons, Thos. Alex. McCall Finch, Wm. Hall Heaney, Thomas Joseph McDonald, George Kelso Shaw, Thos. Francis Tunney.

FINANCE COMMITTEE.

Mr. LAWSON read the following report of a meeting of the Finance Committee held on Friday, October 8th, and moved its adoption:—

It was resolved that Mr. A. Lawson be appointed Chairman of this Committee for the ensuing year.

The TREASURER submitted his financial statement for the quarter, showing an adverse balance of £778 11s. 1d., and liabilities amounting to £116 15s. 1d.

It was resolved: That the financial statement be adopted, and that the Treasurer be authorised to pay the liabilities shown, together with cheques for monthly

salaries, petty cash, fidelity insurance, gas, and electric light.

Petition. The SECRETARY submitted a copy of the petition which has been addressed to the Treasury, and read the following letter which had been received in reply:—

“Treasury Chambers,
11th August, 1915.

Sir,

The Lords Commissioners of His Majesty's Treasury have had before Them the Petition of the Royal College of Veterinary Surgeons, recently forwarded by you to the First Lord, representing the necessity for a grant from Public Funds to assist the College in its present financial difficulties.

In reply I am to refer you to Treasury Letter of the 12th June last (13187/15) and to say that, while My Lords fully appreciate the public services which have been performed by the College for many years past, They regret that they are unable to depart from the decision announced in that letter that no grant can be given from Public Funds.

I am, Sir, your obedient Servant,

JOHN BRADBURY.

The President,

Royal College of Veterinary Surgeons.”

Conversion of Consols. The SECRETARY reported that the Trustees had invested the sum of £8200, on loan from the Bank, in War Stock, and that the necessary transactions for the conversion of their holding in Consols were being carried out.

It was resolved: That, after conversion of Consols, the Trustees be authorised to sell the £8200 War Stock ex-rights, and to place the sum realised to Loan account.

That the Treasurer be authorised to pay to the Trustees Loan account such sum as may be necessary to make good any deficit which may be sustained through the sale of £8200 War Stock.

That the Trustees be authorised to sell £2000 of War Stock (Consols converted), the proceeds to be placed to current account.

Income Tax. The SECRETARY reported that he had appealed to the Inland Revenue Commissioners for the return of Income Tax deducted from dividends on Consols, but had received a reply stating that, in the opinion of the Commissioners, the College is not entitled to prefer any claim for such relief.

Assessment appeal. The SECRETARY reported that on the instructions of the President and Treasurer, he had employed Mr. E. Elliott to conduct an appeal before the assessment Committee of the Holborn Borough Council, and that the appeal had been successful in retaining the rateable value of the building at £225.

Mr. CARTER: I second the motion for the adoption of the report.

Mr. MULVEY: Before that motion is put, I must first of all ask that certain resolutions that have been read by Mr. Lawson be put to the vote and voted on separately. I also desire to call the attention of the Council to the present condition of our financial affairs. You will notice that we have liabilities amounting to £895 7s. 0d.; in addition to that there are certain expenses which we can put down at, say, another £150, which will be incurred before our next meeting; and if you pass to-day the resolution authorising the sale of £2000 worth of War Stock (Consols converted), which I ask you to do, we shall lose at the present rate a sum of £215. That will make our liabilities to the bank £1107. As I have said, I am going to ask you to authorise the sale of £2000 worth of War Stock, and that will leave us a balance which will carry us on at all events to the end of the financial year. We cannot do with less than that amount, and if the present condition of affairs goes on—(we are spending some £500 a year more than our

income)—we shall last between three and four years, and then I do not know what you propose doing. "Sufficient unto the day is the evil thereof"—I suppose that is the way it must be treated, but that is the state of affairs. Whether any members present have anything to suggest in order to ward off this evident state of bankruptcy that we are approaching I will leave them to say. I now move: That, after conversion of Consols, the Trustees be authorised to sell the £8200 War Stock ex-rights, and to place the sum realised to Loan account.

Mr. MCKINNA: I second that.

Sir JOHN M'FADYEAN: I think we must all have realised the extreme gravity of the financial position just disclosed by our Treasurer, and I rise merely to make a suggestion which occurred to me when he pointed out what, according to the present outlook, is likely to be our position some three or four years hence. It appears that we are now spending about £500 annually in excess of our income, and I imagine the members of the profession will think it is our duty to consider immediately whether we can take any further steps to reduce our expenditure. Perhaps you will allow me to move that a small Committee be appointed to consider this question and report to the Council at its next meeting. It occurs to me that we may be forced to economise in respect of the conducting of our examinations, and possibly in other directions, even although serious objections could be urged in ordinary circumstances to endeavouring to reduce our expenditure in that way; but the alternative appears to be that the College will become insolvent.

The PRESIDENT: I will take Sir John's proposition after we have passed the resolutions referred to in the report. I may say that I have been advised that it is necessary that these three resolutions should be passed separately. That is the reason they are put to you in this form—to comply with certain legal requirements of the Bank and the Trustees.

The motion moved by Mr. Mulvey was then put and carried unanimously.

Mr. MULVEY: I now propose the second resolution: That the Treasurer be authorised to pay to the Trustees Loan Account such sum as may be necessary to make good any deficit which may be sustained through the sale of £8200 War Stock.

Mr. PRICE seconded the motion which was carried unanimously.

Mr. MULVEY: I now propose the third resolution: That the Trustees be authorised to sell £2000 War Stock (Consols converted), the proceeds to be placed to current account.

Major-Gen. THOMSON seconded the motion, which was carried unanimously.

The PRESIDENT: With regard to Sir John's proposition, I think it is a question that should go to a Committee to consider whether there are any possible means of saving. You all know that we have been trying to save; every Committee has tried to save in the past as much as it possibly could, but I think this Committee should consider whether there are still any further means of saving on our annual expenditure.

The resolution, That a small Committee be appointed to go into the question of further reducing the expenses of the College if possible, was then put and carried unanimously; and it was also resolved that the Committee should consist of the President, the Treasurer, the Chairman of the Finance Committee and the Trustees.

The motion for the adoption of the report of the Finance Committee was then put and carried unanimously.

REGISTRATION COMMITTEE.

The SECRETARY read the report of the meeting of the Registration Committee held on Thursday, October 7th,

from which it appeared that twelve cases were considered by the Committee. The Solicitor reported that the Scottish authorities had decided not to proceed in the case of John Baird. The Solicitor also reported that as the result of a prosecution of a non-member, I. Stewart, for using the title, a conviction had been obtained, and a fine of £5 and five guineas costs imposed.

A member appeared in answer to a charge of unprofessional conduct, but after hearing the evidence on both sides it was resolved that the case be dismissed, the evidence not being considered sufficient. In another case, the Secretary reported that the member in question repudiated the charge, and that the complainant was not able to attend to bring evidence. It was resolved that the case be struck out.

A complaint was made against Mr. Charles Peirce, Fellow and Member of College, for unprofessional conduct in inserting an advertisement in *The Daily Telegraph* of January last, of which the following is a copy:—

LAME HORSES, ROARERS, Rigs, Vicious Mares, Quitters, Poll Evil, Fistulous Withers, &c.

For special treatment, operations, &c., apply Peirce's Hospital for Horses, The Manor, Shirland Road, W. Phone, Padd., 1161.

The SOLICITOR read the advertisement and also a letter received in June last from Mr. Peirce, regretting its insertion and promising to see that it was immediately discontinued. Mr. Peirce attended in person, and urged that the advertisement had been inserted in self-defence, as there were four unqualified practitioners carrying on business within a very short distance of him who advertised, but he admitted that the advertisement was wrong, and stated that it had not been continued since the letter above referred to, and promised that it should not occur again.

The Committee consider the charge proved.

It was resolved that two members be called upon to appear at the next meeting of the Committee to show cause why their names should not be removed from the Register—one for unprofessional conduct and the other for advertising. In two cases it was resolved that no further action should be taken, and in two other cases it was resolved that there was no case.

Correspondence was submitted, and the Secretary was instructed as to the replies to be sent.

Restoration. Applications for restoration were received from the following gentlemen whose names had been removed from the Register under the operation of Section 5, Sub-section (4) of the Veterinary Surgeons Act:—Charles Robert Anderson, George N. Tomlinson, Robert Weir, and Joseph Randolph Welsby.

The SOLICITOR reported that the applications were in proper form, and it was resolved to recommend that the names of Messrs. Charles Robert Anderson, George N. Tomlinson, Robert Weir, and Joseph Randolph Welsby be restored to the Register of Veterinary Surgeons.

On the motion of Mr. Lawson, seconded by Mr. Banham, the Report of the Committee was received and adopted.

The PRESIDENT: Consequent upon the adoption of the report there are certain matters which should come up for the Council to take action upon, but there is not the requisite quorum of members present, so that those cases will have to be held over. I hope all members of the Council will make a special effort to be present at the next Council meeting, so that we can make the necessary restorations and carry on our business. It is a great pity that they are not here to-day, because with regard to the restorations especially it is very hard on those members, although of course we are not responsible for it. We are five short of quorum to-day.

EXAMINATION COMMITTEE.

Mr. MULVEY read the following report of a meeting of the Examination Committee held on Thursday, October 7th:—

It was resolved that Mr. W. J. Mulvey be appointed Chairman of this Committee for the ensuing year.

A letter dated 11th September, 1915, was received from a rejected Class C student, asking to be exempted from a further attendance of ten weeks instruction before re-examination in Class C. It was resolved to recommend: That the Secretary be instructed to reply that the request cannot be acceded to.

The reports of the Chairmen of the Board of Examiners, the local Secretaries, and Delegates on July Examinations were read and approved.

Educational Certificates numbered 1540 to 1576 were submitted, and, with the exception of 1544, were approved.

Royal Veterinary College of Ireland. A letter dated 31st July, 1915, was received from the Under-Secretary, Dublin Castle, together with a copy of the Charter of Royal Veterinary College of Ireland, dated the 21st January, 1915, and of Regulations with regard to the administration of the College, inquiring whether there is anything in the Regulations to prejudice or to interfere with the rights and privileges granted by the Charter to the Royal College of Veterinary Surgeons.

The Secretary was instructed in reply to thank the Under-Secretary for the courtesy of his letter, and to state that no objection is raised to the Regulations submitted.

Mr. MULVEY: There is one slight omission in the in the report, namely, that the Committee advise the Council to send a vote of thanks to the College of Science, the Assistant Director of Veterinary Services in Ireland, and the other people who assisted at the various examinations. With that addition I move the reception of the report.

Major-Gen. THOMSON seconded the motion, which was carried.

On the motion of Mr. Price, seconded by Sir John M'Fadyean, the report was adopted.

PARLIAMENTARY AND GENERAL PURPOSES COMMITTEE.

Dr. BRADLEY read the following report of a meeting of the Parliamentary and General Purposes Committee held on Thursday, October 7th:—

It was resolved that Dr. O. C. Bradley be appointed Chairman of this Committee for the ensuing year.

Correspondence. The PRESIDENT submitted correspondence with regard to the case of Mr. Henry T. Ashbee, M.R.C.V.S., a retired Veterinary Inspector under the Department of Agriculture and Technical Instruction for Ireland, who appealed to the Treasury for the recognition of his services as counting for pension from the date of his first appointment in 1873, he having been employed during his whole period of office as a whole-time inspector.

The Secretary was instructed to draw up a letter, to be approved and signed by the President and to be addressed to the proper quarter, stating that the Council of the College desires most strongly to support the application of Mr. Ashbee for the reconsideration of the terms of his pension.

Petrol Tax. Letters were received from Messrs. A. S. Adams, J. Holland, and J. B. Tutt, with regard to the Petrol Tax, and it was resolved: That the Secretary be instructed to draft a letter, to be approved and signed by the President, to be addressed to the Chancellor of the Exchequer, asking for his favourable consideration of the position of veterinary surgeons with regard to the Petrol Tax, and pointing out the reasons why a rebate should be granted.

The Committee also desired to express the opinion

that it is very important that members of the profession should enlist the interest of their Members of Parliament in this matter.

Parliamentary Bills. The Secretary reported that since the previous meeting of Committee, the Milk and Dairies (Consolidation) Act, 1915, had been passed into law.

It was resolved to recommend that until further notice the services of Parliamentary Agents be dispensed with, and that the Secretary be instructed not to renew the annual contract for the supply of Parliamentary Bills.

Insurance of Building. It was resolved: That a Sub-Committee consisting of the President, Treasurer, and Trustees be appointed to consider the question of the revision of the Insurance Policies held by the College, and to take such action as may appear to them to be necessary.

Repairs to premises. The SECRETARY reported that, as authorised at the previous meeting, the President and Treasurer had instructed him to have certain repairs executed, the total cost of which amounted to £41 Os. 2d. The work was now completed and had been carried out in a satisfactory manner.

It was resolved that the action taken be approved.

Hunting Memorial. A letter was received from the Secretary of the Hunting Memorial Committee, asking permission to have a brass plate in memory of the late Mr. Hunting placed under his portrait in the Council Room, the plate to bear the words:—

"To the memory of William Hunting, F.R.C.V.S.

Born Died Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations he adds to the knowledge of his profession and assists by his facts in building up the solid edifice of pathological science."

It was resolved to recommend that the request be acceded to.

On the motion of Dr. Bradley, seconded by Mr. McKinna, the Report was adopted.

PUBLICATION, LIBRARY AND MUSEUM COMMITTEE.

Mr. PRICE read the following report of a meeting of the Publication, Library and Museum Committee, held on Friday, October 8th:—

It was resolved that Mr. T. S. Price be appointed Chairman of this Committee for the ensuing year.

Presentations to Library. The SECRETARY reported that since the date of the previous Quarterly Meeting of Council the following presentations had been made to the Library:—

History of the Institute of Chemistry of Great Britain and Ireland, 1877-1914: Calendar of the Royal College of Surgeons, 1915: Calendar of the Edinburgh University, 1915-1916: Annual Report of the Chief Veterinary Officer, Board of Agriculture and Fisheries, for the year 1914: Report on the working of the Veterinary Department of the Rangoon Municipality, for the year 1914-15: Annual Report of the Civil Veterinary Department, United Provinces of India, for the year ending 31st March, 1915: Annual Report of the Civil Veterinary Department, Bihar and Orissa, 1914-15: Annual Report on the Veterinary Service, Ministry of Agriculture, Egypt, for the year 1914: Report on Higher Education in the State of New York, for the School year ending July 31st, 1913: Bulletins of the United Provinces, India:—Note on Foot-and-Mouth Disease; Note on Glanders; Note on Rinderpest; Note on Surra; Note on Indigenous Breeds of Cattle in United Provinces; Preliminary Note on Sheep-Breeding Experiments. *The Bloodstock Breeders' Review*, July and October, 1915: *The Rhodesian Agricultural Journal*, June and August, 1915: *The Journal of the Board of Agriculture*, July, August and September, 1915: *Leaflets of the Board of Agriculture and Fisheries: Orders of the Board of*

Agriculture and Fisheries: The Journal of Comparative Pathology and Therapeutics, June, 1915: *Revue de Pathologie Comparée*, June and July, 1915: *The Veterinary Journal, News, and Record* for the quarter: Bound copy of *The Veterinary Record*, Vol. 27, 1914-15: *The British Medical Journal* for the quarter: *The Educational Times* for the quarter: *The World's Carriers* for the quarter.

And it was resolved that a vote of thanks be conveyed to the respective donors.

Purchases. The SECRETARY reported that the following books had been purchased:—

Tropical Diseases Bulletin, Vol. 6, Nos. 1, 2, 3, 4 and 5. *Register*, 1916. The Secretary was instructed to arrange for the printing and publishing of 500 copies of the *Register* for 1916, on the same terms as last year.

On the motion of Mr. Price, seconded by Prof. Mettam, the report was adopted.

HONOURS AND PRIZES COMMITTEE.

Prof. METTAM read the following report of a meeting of the Honours and Prizes Committee held on Friday, October 8th:—

It was resolved that Prof. A. E. Mettam be appointed Chairman of this Committee for the ensuing year.

Steel Medal. It was unanimously resolved to recommend: That the Steel Memorial Medal be awarded to Prof. James Macqueen, F.R.C.V.S., Professor of Surgery at the Royal Veterinary College, London.

Walley Memorial Examination. The Secretary was instructed to lay before the Committee at its next meeting the Trust Deed of the Walley Memorial Fund.

Prof. METTAM: I move that the report be received and adopted.

Mr. PRICE: I second that. With regard to the medal, I think Prof. Macqueen ought to have a gold medal, not a "Steel" one!

The resolution for the adoption of the report was carried unanimously.

ANNUAL FEE COMMITTEE.

Sir JOHN M'FADYEAN read the following report of a meeting of the Annual Fee Committee held on Friday, October 7th:—

It was resolved that Sir John M'Fadyean be appointed Chairman of this Committee for the ensuing year.

Amendment Bill. The Chairman stated that there was nothing with regard to the Veterinary Surgeons Act Amendment Bill to add to the statement he had made to the Council at the previous meeting.

On the motion of Sir JOHN M'FADYEAN, seconded by Major-Gen. THOMSON, the report was adopted.

FELLOWSHIP DEGREE COMMITTEE.

Dr. BRADLEY read the following report of a meeting of the Fellowship Degree Committee held on Thursday, October 7th, and moved its adoption:—

It was resolved that Dr. O. C. Bradley be appointed Chairman of this Committee during the ensuing year.

Correspondence was read and, after consideration, it was resolved: "That in the event of the regulations for the Diploma in Veterinary State Medicine being adopted as By-laws, in accordance with Dr. Bradley's motion, they be held to be in abeyance until further notice, owing to the war and the state of the College finances."

Sir JOHN M'FADYEAN seconded the motion, which was carried unanimously.

WAR EMERGENCY COMMITTEE.

The SECRETARY read the following report of a meeting of the War Emergency Committee held on Thursday, October 7th:—

It was resolved that the President be appointed Chairman of this Committee for the ensuing year.

Correspondence was submitted, and the Secretary was instructed as to the replies to be sent.

A.V.C. Conditions of Service.

The Secretary read the following letter, dated the 23rd August, 1915, addressed by the President to the Director-General, Army Veterinary Service:—

"Sir,—As you are aware, the Council of the Royal College of Veterinary Surgeons appointed a special Committee to use their influence with the various Veterinary Associations in Great Britain and Ireland for the purpose of recruiting officers for service with the Expeditionary Force, and as a result of these efforts many Veterinary Surgeons were liberated from their practices, arrangements being made to protect their interests during their absence.

During the course of this recruiting campaign, certain points were brought to the notice of the Committee which are said to be having a detrimental effect upon the recruiting of Veterinary Surgeons, and I am desired to bring the more important of them to your notice in the hope that something may be done to remove the difficulties indicated.

It is frequently represented to the Committee, and is a subject of discussion in the various Veterinary periodicals, that the pay and promotion of officers of the A.V.C., Special Reserve and Territorial Force, compare unfavourably with the R.A.M.C., in which conditions of service are much the same as in the A.V.C.

In many cases these gentlemen have either not been able to secure a locum tenens to look after their practices, or have had to pay exorbitant fees for the same, owing to the services of Veterinary Surgeons being at a premium. This sense of grievance is accentuated by the fact that officers holding temporary commissions in the R.A.M.C. receive extra remuneration after one year as an inducement to them to continue their service.

Another cause of complaint is the interpretation which has been put upon the term 'after three years' service as such' in Article 378, Royal Warrant for Pay, 1914.

The officers to which this Article applies have taken the trouble to make themselves efficient in time of peace. Many are either serving overseas or have volunteered to do so, and some of them are now holding responsible administrative appointments.

There is a further source of grievance, in that the establishment of Majors in the A.V.C. regulars has been increased by the promotion of officers with ten years service, and it is felt that a similar privilege should be extended to officers of the same rank and service in the Territorial Force.

It is understood that there is a considerable number of vacancies for Veterinary officers in the New Armies and in T.F. Divisions, and the Committee feel that their efforts for recruiting would meet with more success if favourable consideration was given to the following proposals:—

1. Lieutenants of the A.V.C., T.F. and S.R. to be eligible for promotion to Captain after one year's mobilized service.

2. The interpretation of Article 378, Royal Warrant for Pay, to be amended so that unmobilized service may count towards promotion.

3. Officers with ten years' service in the rank of Captain to be eligible for promotion for the period of the war.

I am, Sir, your obedient Servant,

FRANK W. GARNETT, President

To the Director-General,
Army Veterinary Service,
War Office."

It was resolved that the action of the President be approved.

The PRESIDENT: I propose that the report of the War Emergency Committee be received and adopted.

Sir JOHN M'FADYEAN: I have pleasure, Sir, in seconding that proposal; and may I venture to say that I think the action which has been taken by the President deserves more than the formal approval of this Council. Not only the Council but the profession at large are very greatly indebted to him for the action which he took in order to improve certain matters in connection with the Army Veterinary Services, and it is very gratifying to learn that the representations which he made have already, I understand, been favourably considered, at least with regard to a number of important points.

The PRESIDENT: Before putting the motion for the adoption of this report, I should like to say that I have reason to believe that the action the Committee has taken will be favourably considered. There are many points still under consideration, but I have no doubt that, with constant attention, we will gradually be able to improve matters for the members of the Army Veterinary Corps. But it is a question that requires patience and time. You cannot possibly get, at a time such as the present, these matters through in five minutes or even in five weeks, and I must ask that the profession will be patient and allow sufficient time for the question to be attended to.

The motion was then put and carried unanimously.

MOTION BY THE PRESIDENT.

The PRESIDENT: I propose to withdraw the motion in my name. As it was found there were only three students prepared to come forward for the examination, I considered that the benefit to the country would certainly not have been worth the expense that would have been incurred by the College.

The following is the motion:—"That for the period of the war, rejected students in Class D who desire to join the A.V.C. be allowed to sit for re-examination in Class D without being required to attend at an affiliated school for a further period of ten weeks instruction, Bye-law 72 notwithstanding."

REPORT OF THE FITZWYGRAM PRIZE AWARD.

The SECRETARY announced that the Auditors, Messrs. Woodhouse & Wilkinson, reported that they had checked and found correct the number of marks gained by the various students, and that the two prizes should be awarded to the following:—

- (1) T. F. Tunney, Royal Veterinary College, Ireland, 800 marks, £39 18 11.
- (2) T. J. Bosworth, Royal Veterinary College, London, 786 marks, £23 19 5.

The report was adopted.

APPOINTMENT OF SECRETARIES OF BOARD OF EXAMINERS IN SCOTLAND, LIVERPOOL AND DUBLIN.

Mr. MULVEY: I propose that the gentlemen who at present hold the office of Secretary to the various examining Boards be re-appointed.

Mr. BANHAM seconded the motion, which was carried unanimously.

This concluded the business of the Quarterly Meeting of Council.

SPECIAL MEETING.

A Special Meeting of Council was held immediately following the Quarterly Meeting, at which the same members were present as at the Quarterly Meeting.

The minutes of the last Special Meeting, which had been printed and circulated, were taken as read and confirmed.

MOTION BY DR. BRADLEY.

Dr. BRADLEY: The motion which stands in my name is a purely formal one, but it is quite necessary in order to put the regulations regarding the Diploma in Veterinary State Medicine in order. I move: "That

the regulations for the Diploma in Veterinary State Medicine, as approved by the Council, be adopted as Bye-laws of the College."

I might say that this is not in any way inconsistent with the report of the Fellowship Committee.

Sir JOHN M'FADYEAN seconded the motion, which was carried unanimously.

MOTION BY THE PRESIDENT.

The PRESIDENT: I now move, That Bye-law 10 be altered to read as follows:—"The day for the meeting of the Council required by the Charter to be held within one calendar month after the Annual General Meeting for the election of the President, two Vice-Presidents, Treasurer, Secretary and Registrar, shall be fixed by the President as early as convenient."

Dr. BRADLEY seconded the motion, which was carried unanimously.

MOTION BY SIR JOHN M'FADYEAN.

Sir JOHN M'FADYEAN: I beg to move the following resolution:—"That the conditions relating to required subjects in the Preliminary Educational Examinations shown at page 93 of the Register, be amended to read as follows:—

'Subject to the conditions indicated in the foregoing list, the Preliminary Examinations recognised by the Council are required to include the following:—

- (1) English.
- (2) Mathematics (Arithmetic, Algebra, and Geometry).
- (3) and (4) Two of the following subjects:—Latin, Greek, French, German, or any other modern language (Grammar; Translation into English from unprescribed books; Translation from English)."

May I say, in moving the resolution, that it came to our knowledge that these alterations are in a measure unnecessary. We found that by adhering to the letter of the law as it stands on page 93 of the Register certain of the prescribed certificates were really not obtainable by candidates who intended to become veterinary surgeons, or rather that although the candidates might have complied with the spirit of the Bye-law they could not comply with the letter of it. In my own opinion the alteration does not involve any lowering of the standard of the examination.

Dr. BRADLEY seconded the motion, which was carried unanimously.

MOTION BY MR. MULVEY.

Mr. MULVEY: I beg to move the resolution standing in my name: "That the necessary alterations to Schedule I, consequent on the report of the Preliminary Examination Committee, be adopted."

The PRESIDENT: This is a consequential motion.

Mr. PRICE seconded the motion, which was carried unanimously.

A hearty vote of thanks was accorded to the President for his conduct in the Chair, and the meeting terminated.

ANGLO-FRANCO-BELGIAN VETERINARY RELIEF FUND.

An informal meeting of members of the Council of the Royal College of Veterinary Surgeons was held at the conclusion of the Council meetings on Friday, the 8th October, Mr. F. W. Garnett, President of the College, in the chair. Other members present were:—Mr. Banham, Dr. Bradley, Messrs. Carter, Clarkson, Dunstan, Lawson, Sir John M'Fadysan, Mr. McKinna, Prof. Mettam, Messrs. W. J. Mulvey, Price, Gen. Pringle, Gen. Thomson, Messrs. Shave, Slocock, and Sir Stewart Stockman.

Sir John M'Fadysan explained that a few months ago in France a Committee was formed with the object of giving assistance to veterinary surgeons, both Belgian

and French, who had suffered in consequence of the war. As would be realised by everybody, what had happened in Belgium had meant absolute ruin to a great many members of the profession there, and the same applied also to veterinary surgeons who before the outbreak of the war were in practice in the north of France. Most of these unfortunate people, together with their families, were at the present moment exiled. After the declaration of peace they would still be in a pitiable condition, and deserving of any assistance that their professional brethren could give them. The Committee which was formed in France was called the Anglo-Franco-Belgian Committee, and in anticipation of the fact that the profession in this country would probably desire to assist in this movement, the Committee in France had included among its members the names of five members of the profession in this country, namely, Sir Stewart Stockman, Mr. Dollar, Mr. Hobday, General Moore and Sir John M'Fadyean.

The gentleman who took a very important part in this movement, and might be said to be the initiator of it, was Professor Liautard, who is an Honorary Associate of the Royal College of Veterinary Surgeons and is well known in this country, and probably it was he who had suggested the names of the British Members of the Committee.

He, Sir John, had discussed with Sir Stewart Stockman and Mr. Dollar, the only British members at the present moment in England, the question as to what would be the best thing to do in order to help the movement. They had decided that the best plan would be to constitute a Committee composed of representative veterinary surgeons in this country, and that this Committee should endeavour to raise a substantial sum of money which could be transmitted to the Central Committee in France. Sir Stewart Stockman had been in correspondence with Professor Barrier, a member of the Central Committee, and he might be able to explain in fuller detail what was proposed to be done. It was understood that the necessity for succouring these gentlemen and their families would arise mainly at the close of the war, and it was then that it would be important to have in hand a considerable sum of money.

Sir John moved "That a Committee be formed in the United Kingdom for the purpose of collecting money for the Anglo-Franco-Belgian Veterinary Relief Fund, and that it be composed of the Members of Council of the Royal College of Veterinary Surgeons, the Presidents and Secretaries of the different Veterinary Associations, and that it shall include all the British Members of the Central Committee together with Mr. Bullock. The Committee should also have power to add to its number.

Sir STEWART STOCKMAN seconded the motion, stating that in so doing he need not add his approval, for he was sure that everybody would approve of the objects of the Committee. He had nothing of importance to add to what had been stated by Sir John M'Fadyean. He had been in communication with Professor Barrier, who in reply to his inquiry had suggested that the best and most useful time to use any money which could be collected would be after the war. It was not proposed to dribble it out except in cases of absolute necessity, where the people were in need of a few pounds, or of clothes. Any such help in kind would be warmly welcomed, but the real idea was to wait until the war was over and then, with a substantial sum at their back, to endeavour to repatriate these people and set them up again.

The Chairman put the resolution to the meeting, which was carried unanimously.

The Chairman then suggested that a meeting of the Committee as nominated should be called for 4.30 on Friday, October 22nd, to elect officers and make the necessary preliminary arrangements. This was adopted,

Mr. Bullock being appointed honorary Secretary of the Committee pro tem.

The following is an outline of the nature and constitution of the Central Committee, and a statement as to the objects of the fund.

ANGLO-FRANCO-BELGIAN VETERINARY RELIEF FUND.

For assisting French and Belgian Veterinary Surgeons suffering from the German invasion.

In order to provide a Fund for the relief of Veterinary Surgeons and their families who have suffered through the invasion of Belgium and Northern France, the French Society of Practical Veterinary Medicine, on the initiative of M. Liautard, has arranged for the formation of a Committee consisting of representative Veterinary Surgeons in Belgium, France, and England.

An Executive Committee of 25 members has been appointed, of which Mons. A. Lucet is President; MM. P. Déchambre and H. Vallée, Vice-Presidents; Mons. H. Rossignol, General Secretary; Mons. P. Savary, Assistant Secretary, and MM. Asselin and Houzeau, Treasurers.

The functions of the Committee will be to find means of assisting, both during and especially after the war, all Belgian and French Veterinary Surgeons living in districts which have been invaded by the Germans, or in other ways suffering from the effects of the war.

Gifts in money or in kind are received, and the Committee undertake to see to the immediate needs of any Veterinary Surgeon who may be in want.

The British Committee will make an appeal for funds, to be handed over at the close of the war to the Central Committee to be distributed by them.

It is hoped that not only individual members of the profession in this country, but also every Veterinary Society will send donations to the fund. It is evident that whatever is done in this way to help men who have lost all—house, and goods, and livelihood, will compensate them but to a small degree for the sufferings they have undergone.

It will be difficult at such a time as the present to get into direct touch with every member of the profession. It is earnestly hoped therefore that every member to whom this movement becomes known will be a willing agent of the Fund and make it known as widely as possible.

SOUTHERN COUNTIES VETERINARY SOCIETY [NATIONAL V.M.A.—SOUTHERN BRANCH].

Brighton was selected for the autumn meeting of the Society, held on Thursday, the 23rd June, the President (Mr. G. H. Livesey), who took the chair, kindly placing a room at his residence, 85 St. Aubyns, Hove, at the disposal of the members for the purpose. Mr. H. A. MacCormack of London, Mr. F. G. Samson of Mitcham, and the Hon. Sec. (Mr. A. H. Archer of Southsea, also signed the attendance, while apologies for inability to attend were received from Prof. Wooldridge of London, and Messrs. J. T. Angwin, W. Burt, Jun., W. A. Dellagana (who it was stated is abroad on Government service), W. Coveney, H. H. Jeffries, J. Cecil Munby, C. Pack, C. Peirce, London, G. Parr, C. Roberts, S. H. Slocock, and C. H. Spurgeon.

On the proposition of Mr. MacCormack, seconded by Mr. Samson, the minutes of the last meeting as published in *The Veterinary Record*, were taken as read, and confirmed.

The Hon. Sec. reported that he had no further correspondence to submit, apart from the apologies at inability to be present. The selection of a place for the next meeting next engaged attention.

The President pointed out that they were not bound to have another meeting before the annual meeting in

March, but they usually had one in London during Cattle Show week. The attendance at the present time was necessarily so small that it was not fair to ask anyone to read a paper, but on the other hand the holding of meetings tended to keep members together.

A suggestion was made that the next meeting might be held in London, on the same day as the Central Society met, and on the proposition of Mr. Samson, seconded by the Hon. Sec., it was decided to fix the date provisionally for Thursday, December 2nd. Mr. MacCormack remarked that he was sure the Central Society would be only too pleased to welcome any members of the Southern Counties who could remain till the evening.

The next item was the further consideration of the resolution of the Eastern Counties Veterinary Medical Association, *re* the Compulsory Pupilage of Students. The report of the discussion on this subject, which took place at the Portsmouth meeting, was read over by the President, who invited further expressions of opinion.

Mr. SAMSON remarked that as far as his experience had gone he thought he might say that he owed all his success to his having been articled for three years to a thoroughly good man in Norfolk. He also thought that if they looked back over the career of most of the men who had done well they would find they had been articled to a good veterinary surgeon. How it was to be carried out compulsorily was another matter, but he thought there could be no doubt as to the wisdom of a pupilage.

Mr. ARCHER quite agreed that pupilage to a good man was most desirable, adding that he served three years himself, and had learnt then much that had been extremely useful to him since.

Mr. SAMSON said he knew there was an objection on the part of many of the professors, who held that what was learnt during pupilage must be entirely forgotten when a man went to College, but that was self-opinion.

Mr. ARCHER: I can certainly say that what I learnt during my pupilage has been very useful to me, and I venture to say this is the experience of any practical and successful man.

Mr. SAMSON remarked that if we take ordinary stable duties as an illustration, a young fellow learnt more under a good practitioner in one month than he would at College in two years. He was not referring to the scientific side of the profession so much as to the practical part, and from the point of view of the man who had got to get a living afterwards. Nine out of every ten men who went to College did so to get a living afterwards, and not to become professors, or in the hope of getting a Government appointment at £700 or £800 a year.

Mr. ARCHER also remarked that it was astonishing how scientific knowledge came back in actual practice to the old methods of treatment. He granted that the old methods were a bit too crude, but in principle they were practically the same. In these outbreaks of contagious pneumonia which they had combined with strangles, he had noticed that in very few cases indeed had a horse developed pneumonia when they had had a confirmed strangles abscess, and the abscess had burst and been able to discharge what they might call a really good pus. On the other hand, if a horse had not developed an abscess, or if the abscess had started forming and had never come to a proper head, it was much more likely to develop pneumonia.

Mr. SAMSON said he had always been dubious about opening a strangles abscess until he was certain there was plenty of pus there.

Mr. ARCHER made it a rule never to open an abscess unless it appeared fit to burst. Another thing he had noticed lately was that very few mules were susceptible to strangles, but one reason for this might be that they did not as a rule get very young mules.

Mr. MACCORMACK, returning to the subject under discussion, expressed the opinion that it was a very good thing for a fellow to go through a course of pupilage. It was a debateable point, perhaps, whether that pupilage should commence before a person went to College or while he was at College. Personally, he should say before one went to College. The proper method of talking to a client, and a knowledge of stable management were of incalculable benefit to any young fellow who wished to get on in the profession. He saw how his teacher handled his patients, and, what was equally important, how he handled his clients or customers. A man who can convince a client of the advantages of a certain treatment, even though that treatment might be wrong, got on much better as a rule than the one who treated his cases correctly and yet could not convince the owner. As previous speakers had said, the whole question bristled with difficulties when they came to its practical solution, but, if it was possible, he said, make pupilage compulsory. It would increase a fellow's period of training, but it would be time well spent.

The PRESIDENT suggested that perhaps Mr. MacCormack would move a resolution on the question.

It was eventually resolved, on the proposition of Mr. MacCormack, seconded by Mr. Archer, "That the Southern Counties Veterinary Medical Society endorses the views of the Eastern Counties Society respecting compulsory pupilage, and will support that Society in approaching the Council of the Royal College with a view to getting a workable scheme devised."

CASES OF INTEREST.

The HON. SECRETARY mentioned that it might be of interest to them to know that mange in mules was not taken any account of in the Army unless the skin was in such a terrible state as to be unsightly, adding that the result was that it did not seem to worry them very much.

The PRESIDENT: Does it spread from one to another?

Mr. ARCHER: Yes, and the question has occurred to me as to whether it is conveyed to the horses from the mules.

Asked by another member as to what was the Army treatment for mange in horses Mr. Archer replied that one was ammoniated mercury and lard in the proportion of one part to thirty-two; another was sulphur and white oil, personally he preferred the former.

The PRESIDENT: I should not use that on cats or dogs.

Mr. ARCHER: Perhaps not, but there is one advantage you don't get dermatitis.

This practically concluded the business of the meeting. Tea was afterwards provided by the President, and before the members left a hearty vote of thanks was accorded Mr. Livesey, on the proposition of Mr. MacCormack seconded by Mr. Samson, both for his hospitality and for his kindness in placing a room at their disposal for the meeting.

A. H. ARCHER, Hon. Sec.

VICTORIA VETERINARY BENEVOLENT FUND.

QUARTERLY MEETING, OCTOBER 8TH, 1915.

The Quarterly Meeting of Council of the Fund was held at 10 Red Lion Square, London, on Friday, October 8th, at 5 o'clock. The President, Mr. S. H. Slocock, in the Chair; Prof. G. H. Wooldridge, Messrs. N. Almond, G. A. Banham, F. W. Garnett, and others.

Letters regretting inability to attend were received from Messrs. R. C. Trigger, F. L. Gooch, and W. Shipley.

On the request of the members present, Prof. Wooldridge recorded the minutes of the Meeting.

The minutes of the previous Quarterly Meeting were read and confirmed.

The Secretary's Quarterly Report was read, and was adopted.

SECRETARY'S QUARTERLY REPORT.

"To the President and Council of the Victoria Veterinary Benevolent Fund :—

Gentlemen,—In asking you to receive my Quarterly Report, I have to express my great regret at being unable to be present owing to appointments at home which prevent me from leaving.

Referring to the minutes of the last meeting, it is now a matter of importance that the candidature of the lad, Lawrence B. Farr, to the London Orphan School, should be persisted in. On the last occasion some 372 votes were polled, and, if we can obtain a like number in January, his election should be assured.

I should esteem it a great favour if anyone who will be willing to canvas for votes would communicate with me, in order that I may send them a supply of cards. I am communicating with those who assisted on the last occasion.

Fortunately there are no further applications for relief, and I recommend that the grants to all the old recipients be continued.

The current account at the Bank shows a balance of £25 7s. 5d.

I am anticipating dividends for the following quarter to the amount of £32 14s.

The amount of outstanding subscriptions on the books is about £90, and I would point out the great difficulties I have in collecting these subscriptions. Repeated efforts have been made. So many members are engaged on military duties that it is difficult for me to get at them, and I think I may fairly estimate that not more than 30 per cent. of this sum will be recoverable.

I have liabilities to the end of the year amounting to about £100, and sincerely trust that every effort will be made to obtain new subscribers to the Fund.

A donation of ten guineas has been received from the Central Veterinary Society, which has been forwarded to me by our President, and duly acknowledged.

I append a list of new subscriptions and donations received since last quarterly meeting.

Since preparing this report, I have received the attached banker's letter in my bank-book, which indicates a most generous donation on the part of Capt. O. Dixon, for the credit of our Fund. I feel sure that this will be much appreciated, and probably you will instruct me in the matter. I shall await instructions before sending receipt, as the matter has only just come to hand to-day, October 5th.

List of new Subscribers and Donations received since last quarterly meeting, July 1st, 1915.

SUBSCRIBERS.

Cross, H. E.,	Punjab, India	1	1	0
Reali, R. J. O.,	Tenby, S. Wales	10	6	
Taylor, W. G.,	Nottingham	10	7	
Rabagliati, D. S.,	Cairo, Egypt	1	1	0
Haywood, Chas.	Leicester	1	1	0
Yeomans, H.,	Smethwick	10	6	
Shipley, Lieut.,	A.V.C.	10	6	

DONATIONS.

Shipley, W.	Collecting box	12	0	
Sloccock, S. H.	do.	6	7	
Boning, E.	Bowls Tournament	16	0	
Parsons, C. F.	Life member	10	10	0
Jack, D. S.,	King's Lynn. Bowls	5	0	
Central Veterinary Society,	per E. L.			
Stroud, Treasurer		10	10	0
Dixon, Capt. O.,	British E. Africa	20	0	0
Boltons Cinema,	per E. A. West	5	0	6

It was unanimously agreed that all the old grants to the recipients should be continued.

A hearty vote of thanks was accorded to Capt. Oswald Dixon, for his generous donation of £20, and also to the Central Veterinary Society, for their donation of £10 10s.

A fresh application received by Mr. Garnett was introduced by him. The Secretary was instructed to enquire into this case.

The usual vote of thanks concluded the business of the meeting.

Auximones.

Prof. W. B. Bottomley, of King's College, delivered the first of a series of lectures at the Royal Botanical Society of London, recently.

Prof. Bottomley showed that by utilising the bacteria of the soil, a substance could be produced fifty times as valuable as ordinary stable refuse. The new substance had been discovered in peat, which was treated with bacteria, and one part in three million of the auximones, or accessory food power, had, it was demonstrated, doubled the growth of plants. With treated moss and the bacteria extract, there could be grown in seven weeks, even in a drawing room, a boxful of potatoes without soil or any attendant trouble. Botanical research has shown that half a thimbleful of soil contained thirty to fifty million microbes engaged in manufacturing ideal food material upon which plants could grow, and the latest discovery was that these microbes were manufacturing the essential substance which promoted the growth to enable other substances to be built into living tissue. Soil fertility depended entirely upon soil bacteria.

In subsequent lectures the story of soil inoculation and then the discovery of the food substances will be dealt with.

Calcium Hypochlorite Solution as a Wound Dressing.

Writing to *The British Medical Journal* Mr. L. Stewart Sandeman says :—"I think it may interest some of your readers to know that for several years I have used a preparation of bleaching powder for dressing dirty wounds. As far as I can recollect, it is some fifteen or sixteen years since I read in *The British Medical Journal* an article contributed, I believe, by a Welsh doctor, saying that he found a 1 per cent. solution of calcium hypochlorite of the greatest value in the treatment of varicose ulcers of the leg. Having some difficulty in obtaining this, I prepared a solution of the salt from 3 drachms of bleaching powder, as sold in penny packets for domestic use, to which 20 oz. of water were added, making a solution of about 2 per cent. This is thoroughly dissolved, and after allowing the bleach to settle the clear supernatant fluid is poured off and is ready for use.

I have found it invaluable in the treatment of offensive sores, especially of tertiary syphilitic ulcers. For these, small pieces of lint soaked in the lotion are cut exactly the size of the sore, which is filled up level with the surrounding skin. A thin layer of cotton-wool is then applied to equalize pressure under a thin firm bandage. While the wound is dirty, the dressing must be changed three or four times daily, or oftener if required, but when the wound is clean it is sufficient if it be kept constantly moist, but on no account must an impermeable covering be applied. In the cases in which Dr. Louise McLlroy and I have had opportunity of trying it we have found it entirely satisfactory."

Hôpital Bénévole 301 Chanteloup,
Troyes (Aube), France.

Dr. RAWDON WOOD (Hove), in a note on this subject, writes:—"The old practitioner always chortles when one of his old drug friends comes to the fore and wins. For over twenty years I have loudly proclaimed that liquor sodae chlorinatae (B.P.) suitably diluted was the best, cheapest, and most satisfactory of all antiseptics. I never use it stronger than 1 in 4, and rarely weaker than 1 in 40; 1 in 10 is the usual strength. Why use 1 in 4 when 1 in 10 is strong enough for any ordinary case, and much less annoying to the nasal organ? The neutral solution advocated by Dr. Dakin is, however, a great improvement. It is just as efficient as my old friend, very nearly as cheap, absolutely unirritating, and not nearly so pungent."

Dr. T. FREDK. J. BLAKER (Brighton) writes:—"I see some firms are charging 3s. for half a gallon of hypochlorite solution (Dakin's formula). I found no difficulty whatever in making the same quantity for 2½d. according to the formula in the *Journal* of August 28th."

Cruelty Charge at Hailsham.

At the Hailsham Petty Sessions, on Wednesday, 29th ult., before Mr. H. Curteis (in the chair) and other magistrates, Henry Mandy Simmons, of Amberstone Grange, Magham Down, a well-known farmer, was summoned by the R.S.P.C.A. for permitting a horse to be cruelly ill-used, and George Harris, the driver, was summoned for working the horse in an unfit state.

The defendant was represented by Mr. Niedermayer, of Eastbourne.

Mr. A. Wagstaffe, the R.S.P.C.A. Inspector for Eastbourne, deposed that on Sept. 15th he was in Market Street, Hailsham, when he saw the horse in question being driven out of the Market Yard. He noticed the animal limp, and examining it, he saw that it was an aged horse in fair bodily condition. It was lame in both hind limbs, and was suffering from ringbones and a sprained back. He asked the driver to refrain from working the horse. Then the owner came along and demanded what was the matter with the horse. Witness told him it was lame. The owner denied it, and said he would call a veterinary surgeon. Witness replied that he could do so. There was one in the Market, but he did not call him. Witness then got Mr. Wallis, a qualified veterinary surgeon, to examine the animal.

Cross-examined, the witness admitted that the exit from the Market was uneven. He denied that the lameness of the horse was spasmodic. He admitted that disease might cause partial paralysis of the limbs.

P.C. Pinnock said that his attention was directed to the horse—a black gelding—by the last witness on the day mentioned. The horse was undoubtedly lame.

Mr. J. E. Wallis, M.R.C.V.S., said that he was asked to examine the horse about 10.45 on the morning of 15th September. The horse was lame and had a ringbone, the biggest he had ever seen. The horse was stiff, and was not fit to walk about or to pull.

Defendant's solicitor was about to quote a veterinary work by Williams, when witness remarked: "That book of Williams is twenty years old." (Laughter).

Mr. Niedermayer said he took it that the statements made therein were as true to-day as then.

Witness: Veterinary science has made great advance since then. He added that the horse could not be cured.

The Clerk: What would you do with it?—Shoot it.

THE DEFENCE.

Mr. Niedermayer argued that the Bench, before they could convict, must be satisfied that there was guilty knowledge on the part of the defendant. This, he submitted, was not. He called the defendant, who said that he had had the black gelding between seven

and eight years. He had never noticed signs of lameness. On the morning of September 15th he saw it go market with four calves in a cart. Later, at the Market, his man informed him that he had been stopped, and he had the horse taken home. Since September 15th he had the horse under observation. He had seen no sign of lameness. When he received the summons he telephoned for Mr. McNeil, of Eastbourne, a veterinary surgeon, to examine the horse.

George Harris, the carter, said he had known the horse between seven and eight years, and had not noticed any lameness.

The Clerk: But Mr. Wallis said it had the biggest ringbone he ever saw. Is that right?—No, sir.

David Kempshall and Thomas Bishop, other employees, corroborated.

The latter witness, asked if he knew what ringbone was, replied: "Yes, in a sense." He added that the horse had got a peculiar walk, which he attributed to "its funny shape."

Inspector Wagstaffe: Its funny shape! How is it funny?—Well, it has a little hump back and drooping hind legs.

Is it a horse or a camel?—A camel?

Yes, you say it has a humped back.—No, sir, they don't have camels in these parts.

Mr. McNeil, M.R.C.V.S., said that he examined the horse on September 25th. It was a very old horse in good bodily condition. It suffered from very bad ringbone, and its feet in front were bad. The horse suffered from mechanical lameness when witness saw it. Mechanical lameness would cause discomfiture but not pain.

Cross-examined, the witness agreed that it was quite possible for the horse to be in pain, when stopped.

The Bench retired to consider their verdict, and on returning, the Chairman characterised the case as a bad one. The owner was fined £5 and ordered to pay the veterinary surgeon's fee, and Harris, the driver, was fined 1s.—*Sussex Express*.

German Methods.

Dr. Sanguinetti, of Genoa, declares that there is a strong reaction against German "Kultur" in Italy. He notes in the *Annales de gynécologie et d'obstétrique* for July-August, 1915, that Professor Bossi, of Genoa, had recently spoken about the victims of Teutonic gynaecology. He began with the case of Semmelweis, the pioneer of antiseptic surgery, persecuted because he was a Hungarian. He showed how Krönig's practice of subcutaneous and spinal anæsthesia had given rise to grave abuses, and how the trade in tuberculin had profited professors as well as pharmacists. Bossi had himself taught and practised conservative operations on the uterus, accepted by British, French, and Russian obstetricians, yet the Germans still insisted on castration and Cæsarean section under the same conditions. Lastly, the Germans have been guilty of the grossest plagiarism. Scipione, Mercurio, and Melli, writing in 1605, La Torre in later years, and Gigli as well as Bossi, still living, have alike been victims, their innovations being ascribed in Germany to Walcher, Momberg, Döderlein, and Dührssen.

Personal.

THORNE-TOWNSON. On the 28th Sept., at the Abbey Church, Bourne, Lincs., by the Rev. A. Galton, M.A., assisted by the Rev. Colton Smith, M.A., ARTHUR PERCEVALL THORNE, Lieut., third son of the late Rev. H. A. Thorne and Mrs. Thorne, of Hatch End, Middx., to Annie May, only daughter of the late W. Townson, Esq., F.R.C.V.S., and Mrs. Townson, of Bourne, Lincs.

McGOWAN.—On the 9th Oct., at the Nursing Home, 96 Westbourne Avenue, Hull, to the wife of Major J. A. B. McGowan, A.V.C.—a son.

Mr. W. T. M. Browne, v.s., Abbeyfield, Naas, obtained a first prize in a class for Best Heifer calved in 1914, with Red Shorthorn heifer bred by exhibitor. A second for Best Bullock or Heifer born on or after 1st April, 1914, got by a pure-bred Aberdeen-Angus bull, the exhibit not to be eligible for entry in the Aberdeen-Angus Herd Book. A first for Five Apples, any variety, at the twelfth annual show of the North Kildare Farming Society, held at Naas on Wednesday, 29th September.

ARMY VETERINARY SERVICE

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Oct. 5.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieuts. to be temp. Captains:—

J. M. Smith. Dated Sept. 25.

J. Pugh. Dated Sept. 26.

Temp. Lieut. F. C. Gillard relinquishes his commission on the termination of his engagement. Dated Sept. 24.

Temp. Lieut. P. A. Robinson relinquishes his commission. Dated Oct. 6.

Oct. 6.

Lieut. J. Legg, Australian Army Vet. Corps, to be temp. Lieutenant. Dated Oct. 7.

Oct. 7.

Temp. Lieut. J. Pollard to be temp. Captain. Dated Sept. 2.

Oct. 8.

Temp. Lieutenants to be temp. Captains:—

W. H. James. Dated Sept. 2.

G. T. F. Budge, J. N. Cooper. Dated Sept. 7.

C. M. Barton. Dated Sept. 21.

F. C. Maynard. Dated Sept. 25.

To be temp. Lieut.:—A. Logan. Dated Sept. 27.

Oct. 12.

To be temp. Lieuts.:—W. F. Widden, D. R. Davis, H. G. Bowes, F.R.C.V.S. G. Green. Dated Oct. 1.

Oct. 14.

To be temp. Lieuts:—

O. S. Broadhurst. Dated Sept. 27.

E. Patrick. Dated Oct. 1.

To be temp. Qmr. with hon. rank of Lieut.:—G. F. Galloway. Dated Oct. 10.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Oct. 4.

To be Capt.:—Lieut. J. Hill. Dated Sept 7.

To be Lieut.:—E. Child. Dated Oct. 5.

Oct. 7.

Date of promotion of Capt. J. A. Dixon is June 16, and not as in *Gazette* of Sept. 14.

To be Lieut.:—W. H. Williamson. Dated Oct. 7.

Oct. 12.

To be Lieut.:—R. Jones. Dated Sept. 18.

Oct. 13.

To be Capt.:—Lieut. R. F. Wall. Dated July 21.

To be Lieut.:—W. Caudwell. Dated Oct. 14.

OBITUARY.

Veterinary Captain John Storie, Scots Greys Depot, Dunbar, who died on Monday, 4th inst., as the result of an attack of pleurisy, many years ago succeeded his uncle in a veterinary surgeon's practice in East Linton, and the business has been an extensive one ever since. At the outbreak of the war Captain Storie was attached

to the Lothian and Border Horse, a regiment with which he had been connected for a long time. He was recently transferred to the Scots Greys Depot at Dunbar, which enabled him to give some attention to his practice. In civil life Captain Storie took a keen interest in everything pertaining to the welfare of the district in which his lot was cast. For a number of years he was a member of the Town Council, and for several years he served as Provost. Captain Storie lectured of veterinary science with much acceptance in the Edinburgh and East of Scotland College of Agriculture, and he read some valuable papers before the East Lothian Farmers' Club at Haddington.—*The Scottish Farmer*.

Mr. William Henderson Bryce, of Arcola, Sask., well known throughout the North-West of Canada as "Scotty Bryce," died suddenly the other day. Mr Bryce was a Son of the Rock, his father having been Mr. John Bryce, V.S., Stirling.

THE REBATE ON PETROL.

Ormerod House,
Haywards Heath.

Sir,—The profession are undoubtedly grateful to Mr. John O'Connor, M.P., for his endeavour to obtain for us a rebate on petrol. Such can, however, only be obtained by concerted action. I had already written to the Member for this Division, who, as his reply dated Sept. 28th shows, is in entire sympathy with us.—Yours faithfully,

Oct. 12th.

H. TAYLOR.

House of Commons.

Dear Mr. Taylor,—I have always thought that Veterinary Surgeons ought to have the reduction in the price of petrol. I very much doubt whether it is possible to get the Chancellor of the Exchequer to give anything away just now, but I will ask him to make this concession.

8th Sept., 1915.

Yours faithfully, H. S. CANTLEY.

VALIDITY OF AGREEMENTS.

Sir,—The value of "Agreements not to practice" lies in their moderation. If "Pro Bono Publico" will confine the scope of his agreements within reasonable limits he may sleep peacefully. They will be quite binding.

Excessive time and area, due to a desire for overmuch protection, are the rocks on which these bonds founder. The figures mentioned by "Lex" may be accepted as reasonably safe. Anything more stringent is asking for trouble.

Yours faithfully,

October 16th.

ESCLAPIUS.

Accident to a Motor—Judgment.

Sheriff Napier issued his interlocutor in the action at the instance of John Baird, M.R.C.V.S., 25 Castle Street, Dumfries, against (1) Messrs. W. T. Henley's Telegraph Works Company, Ltd., 59 Waterloo Street, Glasgow; (2) the Provost, Magistrates, and Council of the burgh of Maxwelltown, as road authority of said burgh; and (3) the Right Hon. Robert Munro, K.C., M.P., his Majesty's Advocate, representing the Post Office. Pursuer claimed from the defenders £41 7s. 3d. in the name of damages to his motor car sustained in an accident in Galloway Street, Maxwelltown, on 23rd December.

Sheriff Napier dismisses the action on the ground that he has no jurisdiction, and that in respect of the burgh of Maxwelltown the pursuer's averments are irrelevant and insufficient to support the conclusion of the writ against them. He finds pursuer liable in ex-

penses to all the defenders; and in the case of the Town Council he grants them not only the judicial expenses, but expenses taxed as between agent and client.

In a note the Sheriff says: The pursuer avers that about five o'clock on 23rd December last, while motor-ing along Galloway Street, Maxwelltown, towards Dum-fries, his motor was precipitated into a hole which was made by the defenders, Messrs. Henley's Telegraph Works Company, while laying telegraph wires under that street. It was injured, and he sues for the loss and damage he has suffered in consequence. The party primarily liable, one would think, would be the Henley's Telegraph Works Company. But they could not be sued in this Sheriffdom, as they did not, when the action raised, carry on business in it. Besides, the pur-suer considers they are not the only parties responsible for the accident. The burgh of Maxwelltown as the road authority, and the Lord Advocate as representing his Majesty's Post Office, he pleads, are, along with the Messrs. Henley, jointly and severally or severally liable. Not unnaturally the defenders seek to have the action dismissed on a preliminary plea. In the first place, they all plead that this court has no jurisdiction, and this was argued from two points of view.

(a) It was argued that section 6 (a) of the Sheriff Court Act only gives jurisdiction in a case like the present, where all the parties do not reside in the Sheriff-dom, in cases where at least one of them "resides" within it, and that none of them do. Messrs. Henley do not. The Lord Advocate does not. Nor does the burgh of Maxwelltown "reside" in the Sheriffdom. It is only a "person" that can "reside" or have a "resi-dence." A corporation such as the burgh cannot "reside," if that word is given its ordinary meaning. This argument seems to me to be untenable. The burgh of Maxwelltown certainly resides in Maxwelltown. Fin-ally, this point can be put in the form of a sollogism. Every person can reside and have a residence. A cor-poration is by the interpretation clause included in the term person. Therefore a corporation can reside and have a residence.

(b) The parties plead that because they are alleged to be delinquents and must therefore all be sued in one action, it must be dismissed because one of them, the Lord Advocate, as representing the Post Office, that is the Crown, cannot be sued in an inferior court. In my opinion this proposition was in terms decided in *Som-merville v. Lord Advocate*, 20 R 1050. "The Crown is not subject to the jurisdiction of any court except by voluntary submission. The Crown has submitted to the jurisdiction of the supreme court, and from such sub-mission alone has their jurisdiction proceeded." (Lord Trayner at p. 1060). The fact, therefore, that in that case the court was the Dean of Guild Court, while in this case the court is the Sheriff Court, can make no difference. Of course, the Crown need not plead its privilege, and recently it was without objection sued in this court. But when it pleads its privilege, its plea of privilege must be sustained. Nor is there anything in the argument that all causes not exceeding £50 in value must be raised in this court. That section (7) only applies to cases "competent" in this court. A case against the Crown is not competent in the Sheriff Court, and therefore a claim against the Crown for less than £50 must be sued for in the Court of Session if it can, as I assume, be sued for at all. For these reasons the plea of no jurisdiction must be sustained, and the case dismissed.

For another reason also the case must be dismissed. The case must, of course, be a relevant case in a question with each of the defenders, and in my opinion the pur-suer has at least stated no relevant ground of action against the burgh of Maxwelltown. He avers that the hole into which his motor ran, had been excavated with the consent and under the supervision of the burgh by

Messrs. Henley, on behalf of the Post Office. The con-sent could not have been withheld. In terms of section 6 of the Telegraph Act, 1863, the Postmaster-General, who comes in place of the company there mentioned, "may place a telegraph under any street." The word "may" means "shall have power," and a local authority must consent to his doing so, and can only as it were fight for terms. Again, "supervision," I suppose, means the "superintendence" referred to in section 17 (2). If so, it is really compulsory superintendence, because if the road authority will not superintend the work the Postmaster-General will under section 17 do the work without it. Now, therefore, can the burgh of Maxwell-town be liable in damages simply because it did what the statute said it must do? It is not, for instance, averred that it did the work of superintendence badly. All that is said is that the hole was not lighted, and that it ought to have been protected and lighted. This, I think, is so, but the party whose duty it was to light and protect it, both at common law and under the Burgh Police Act, section 188, is in my opinion the Messrs. Henley. For these reasons I hold that no relevant case has been stated against the burgh of Max-welltown, and the action, so far as directed against it, must be dismissed. As, however, it is the only one of three defenders who "resides" in the Sheriffdom, it follows that none of them have been properly convened in this court, and the whole case must be dismissed. The pursuer, has, it seems to me, stated a relevant case as against Messrs. Henley; but they cannot be sued here, because this court has no jurisdiction over them.

Sale of the late Mr. Brydon's Clydesdales.

At the dispersal sale, at Seaham Harbour, of the late Mr. Robert Brydon's Clydesdale stud, there was a very large attendance from all parts of the three kingdoms, and some remarkable prices were realised. A com-mencement was made with the One-year-old Fillies, of which there were five. Royal Blood, by Bonnie Buch-lyvie, made 640 gs., being bought by Mr. Allan, Whit-horn. Among the Two-year-old Colts, Field Master, by Bonnie Buchlyvie, made 700 gs., Mr. Fleming, Auchter-arder, being the purchaser.

Among the Stallions was the famous Bonnie Buch-lyvie, by Baron of Buchlyvie out of Queen of Beauty, a horse with an unbeaten showyard career, and winner of the Cawdor cup, and one which has been remarkably successful as a breeder. He was knocked down for 5000 gs., to Mr. Kilpatrick, Craigie Mains, Kilmarnock. Another Stallion, Phillipine, by Bonnie Buchlyvie out of Denton Lady, with a splendid showyard career, was sold for 2300 gs., to Mr. Ferguson, Elgin.

Prickwillow, by Bonnie Buchlyvie, went for 360 gs., to Mr. Kennaway, Cramlington, and Dandy Dick, by Bonnie Buchlyvie, went for 250 gs., to Mr. Phillips, Carlisle.

There were eighteen Brood Mares with Foals at foot, and the top price for a mare was 625 gs., given by Mr. Donaldson, Glasgow, for the noted Silver Bangle, by Bonnie Buchlyvie. She is a prize-winner. Her foal made 215 gs., given by Mr. Marshall, Stranraer. Other brood mares which made good prices were Silver Queen by Silver Cup, 510 gs., paid by Mr. Johnson, Carlisle; Woodbine, 290 gs., Mr. Duncan, Uding Station; Silver Blossom, 250 gs., Mr. Brydon, Seaham; and Syringa, 250 gs., Mr. Donaldson, Glasgow.

Among the seven Three-year-old Fillies, Mr. Johnson, Larbert, gave 435 gs. for one by Bonnie Buchlyvie, and Mr. Cairns, Abercrombie, paid 650 gs. for a two-year-old filly, also by Bonnie Buchlyvie. For a Yearling Filly by Bonnie Buchlyvie, Mr. Aikenhead, Seaham, paid 250 gs.

The Auctioneers were Messrs. A. T. and E. A. Crow, Sunderland.

The total realised was £21,186 18s.

Slaughter of in-calf Cow: Prosecution in Glasgow.

A case under the Slaughter of Animals (Scotland) Order, 1915, made by the Board of Agriculture for Scotland, came before Sheriff Craigie in Glasgow Sheriff Criminal Court to-day.

James Alexander, butcher, 138 Nelson Street, South Side, Glasgow, was charged with contravening the Order by having bought at a sale in the Cattle Market, Gallowgate Street, on July 2, a cow which was visibly and obviously in calf, and that the cow was slaughtered by his instructions on the following day.

He pleaded not guilty, and was defended by Mr. David Cook, writer.

Mr. A. M. Trotter, veterinary surgeon for the Corporation of Glasgow, stated that he was called to the killing house at Moore Street, and saw there the carcass of a cow and also of a calf almost fully developed. The cow had from seven to fourteen days to go to calf. He formed the opinion that the animal was an Ayrshire cow.

In cross-examination the witness said he did not remember having been deceived by a cow which was in calf, but admitted that a man might make an error in this regard. He learned that the cow had been bought by the respondent as fat stock, and was sold for slaughtering purposes.

Mr. Cook—Evidently the auctioneers were deceived also?

Witness—Auctioneers having so many cattle passing through their ring have not the best opportunity of observing them; they pay more attention to bidders than to the cattle.

Re-examined—The witness gave it as his opinion that

there was no occasion in this instance for anyone being misled as to the condition of the animal.

After further evidence, the Sheriff found respondent not guilty of the charge.—*The Evening Times*, Glasgow.

The Board desire to point out to live stock owners that the importation of cattle into Ireland can be effected only on the authority of, and subject to, the conditions of a Permit granted by the Department of Agriculture and Technical Instruction for Ireland, but that Department are prepared to consider applications for permits in respect of animals proposed to be imported for breeding purposes or exhibition. Each application must be supported by such information regarding the proposed importation as the Department may require and by satisfactory evidence as to the health of the cattle concerned and of all other animals on the premises where the cattle are, or have recently been, located. Forms for the purpose of furnishing the necessary information and evidence may be obtained on application to The Secretary, Department of Agriculture and Technical Instruction for Ireland (Veterinary Branch), 50 and 51 Upper Mount Street, Dublin.

Intending importers should note that in the case of young calves, the importer will be required to make suitable arrangements for the care and feeding of the animals during the importation journey.

Applications for Permits to import cattle (or calves) recently exposed in any open fair or market will not be considered.

Board of Agriculture and Fisheries,
Whitehall Place, London, S.W.
7th October, 1915.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)			(a)	
Gr. BRITAIN.											
Week ended October 9	9	9			2	3	20	32		61	228
Corresponding week in											
1914 ...	11	13					†	†		112	1181
1913 ...	9	10			2	2	15	32	1	43	593
1912 ...	14	14	1	4	2	2	12	20	2	29	417
Total for 41 weeks, 1915 ...	455	517			38	69	||660	||1417	164	3269	14273
Corresponding period in											
1914 ...	579	636	22	108	82	250	†1530	†2642	155	3384	32941
1913 ...	429	474			124	301	2031	4053	137	1947	25937
1912 ...	618	699	92	639	143	262	2446	5234	182	2400	31823

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked: London 2, York, W. Riding 1
Board of Agriculture and Fisheries, October 12, 1915 3 || Figures for twenty-eight weeks only.

IRELAND.	Week ended Oct. 9	...	...	...	...	...	...	Outbreaks 3	7	5	12
Corresponding Week in {	1914 ...	...	...	...	...	...	...	...	9	3	9
	1913 ...	...	...	...	...	...	...	3	7	6	36
	1912 ...	...	...	1	5	...	...	...	2	1	2
Total for 41 weeks, 1915		...	1	1	1	3	62	327	202	1132
Corresponding period in {	1914 ...	1	1	76	957	...	...	68	418	166	854
	1913 ...	...	...	...	...	...	...	108	404	123	758
	1912 ...	3	3	31	269	...	...	55	272	191	1584

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Oct. 11, 1915
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1424

OCTOBER 23, 1915.

VOL. XXVIII.

GLANDERS.

In October last it had become uncertain whether the total number of outbreaks of glanders in 1914 in the United Kingdom would reach a hundred. The uncertainty remained right up to the end of the year—a heavy final week might have brought us to the hundred. But the actual total for the year was 97; and this was the first time our glanders return ever fell below three figures.

This year there is an important difference. It is now a question whether the total number of glanders outbreaks for 1915 will reach fifty—just half the debateable number of last year. It may, or may not—at present, the odds look rather against it doing so. But whether it actually does or not is of no great moment: the real importance of the figures is that they illustrate how rapidly glanders is dying out in Great Britain.

There is now only one factor in the glanders question that need trouble us—the inevitability of its re-introduction here from the Continent after the war, and the uncertainty as to how serious a re-infection of the country may result. We have no data to guide us regarding the latter point. We do not know how glanders is progressing amongst the armies in the Western theatre of the war, though we may be quite certain that it is increasing more or less. We do know that the disease has wrought sad havoc on the Eastern front—as everyone with knowledge of the incidence of glanders in Europe knew that it would do—but it is still uncertain how far, if at all, this will affect the English armies.

But, whatever amount of infection may be introduced after the war, our existing machinery will be able to cope with it. Our Glanders Order has not yet been in force for eight years; and the tremendous progress we have made since its adoption proves its adequacy.

EQUINE TUBERCULOSIS.

Capt. Broome's clinical note this week—which includes the report of a commendably thorough post-mortem examination—again suggests to us a question which we have raised before. Is not equine tuberculosis a more common disease than a great many practitioners suspect? We think it probable; but the existing evidence is scarcely sufficient to warrant a decided opinion.

The present moment, when an unprecedented number of veterinary surgeons are solely occupied with the care of large batches of horses, offers an excellent opportunity for observations upon the subject.

A CASE OF EQUINE TUBERCULOSIS.

The subject, a brown gelding, 14 years, was admitted to hospital a considerable time ago suffering from a contused wound on the off hock, and mange.

It came under my notice about a month ago when it was still undergoing treatment for mange, and its condition was poor. About a week later it began to waste rapidly, and it was destroyed on the 29th ult. The appetite was good throughout.

Post-mortem. The carcase was emaciated. The stomach and intestines were full of ingesta. The diaphragm was studded with tubercles, varying in size from a barley grain to a pigeon's egg, over the muscular and tendinous portions of both surfaces, the tubercles being much more numerous on the peritoneal surface, while the tendinous portion of the latter showed also a considerable amount of diffuse congestion.

The spleen contained several large tubercles causing rounded elevations on both of its surfaces, and its peritoneal covering was studded with tubercles, chiefly in groups.

There were several small tubercles on the peritoneal covering of the liver close to the hepatic lymphatic glands, but the latter were not affected beyond being congested. There were also a few small tubercles on the peritoneal covering of the left lobe of the liver on its posterior surface. The liver tissue itself was normal.

The kidneys were normal, but the renal lymphatic glands were enlarged and contained tubercles. The group of lymphatic glands adjoining the pancreas was also tuberculous. There was one tubercle in the wall of the stomach close to its junction with the duodenum, but otherwise the stomach and intestines appeared normal, and there was no sign of ulceration throughout. The mesenteric, colic, and internal and external iliac lymphatic glands were normal.

The lungs were crammed with miliary tubercles and the uncut lungs when handled felt gritty, but there was no accompanying congestion of the lung tissue. The pleura, with the exception of that portion covering the diaphragm was free from tubercles.

The mediastinal lymphatic glands showed marked mottling when cut into, and two small recent tubercles—there was no caseation.

The bronchial lymphatic glands also showed similar mottling of their substance, but no unmistakable tubercles were observed.

The suprasternal lymphatic glands were tuberculous.

The left submaxillary lymphatic gland was affected, and the pharyngeal and post-pharyngeal glands contained numerous large caseating tubercles.

In all of the affected glands, with the exception of the mediastinal, the tubercles were either caseous or undergoing caseation, the caseous material being in every case of a greyish-yellow colour.

The spleen, together with the report on the case, was forwarded to Sir John M'Fadyean, and in commenting on the case, he remarked that one seldom sees in a horse such well-developed "grapes" on the surface of the peritoneum, and that lesions in the submaxillary and pharyngeal glands are also rather exceptional.

J. D. BROOME, Capt. A.V.C.
Station Vety. Hospital, Bulford.
12th October.

ABSTRACTS FROM FOREIGN JOURNALS

"WAR ILLNESS."

Since last winter, by regulations of the German authorities, owners of animals have been obliged to reduce and sensibly modify the food rations of their stock.

The new régime has not been borne always and everywhere without inconveniences. On the contrary, especially in horses and cattle, forms of disease have been observed which furnish material for study and work to the veterinary surgeons remaining in the country, and which have been collected under the name of "war illness."

Børner reports his observations of this condition or conditions (*Berliner Tier. Woch.*, July 1, 1915). In horses, more or less serious symptoms of vesical tenesmus were seen. Some animals fell suddenly to the ground and then exhausted themselves in vain efforts to rise. In some cases the horses had to be stopped from work because they became uneasy and sweated; and, when brought back into the stable, they seemed to have paralysis of the hind limbs, or an extreme tension of certain groups of muscles or paralysis of the extensors of the patella appeared. Upon rectal exploration the bladder was found full and tense; and the urine which escaped in consequence of pressure upon the bladder was reddish-black, suggesting hæmoglobinæmia.

Børner also saw various cases of pododermatitis, probably of rheumatic origin. These last, according to him, were etiologically distinct from hæmoglobinæmia; because they did not become manifest, as in typical cases of that disease, when the horse commenced to work. They were nearly always associated with hæmoglobinuria; and for that reason Børner attributes them to the new régime.

The treatment, in every case, consisted in an injection of arecoline and eserine. After this the horses eliminated dark and turbid urine, the morbid symptoms rapidly disappeared, and very often the animals were cured after two or three days. In some cases, however, there were two or even three relapses, or recovery was not obtained, and the horses died or had to be slaughtered.

The aim of the injection of arecoline and eserine is to stimulate the organs of elimination. At the same time the bladder should be emptied either by pressure upon it or by catheterisation. Immediately the action of the arecoline is terminated, every effort should be made to get the horse on his feet. Børner also administered digitalin and calomel, and combated the muscular affections by local application of ointments.

In times of peace, cases of hæmoglobinæmia are usually seen in horses which are too highly fed and do not receive sufficient exercise. It is not easy to explain why the present cases should occur under quite opposite conditions, and Børner cannot find a convincing reason for it. He has observed, however, that horses under the present régime sweat easily and profusely, and for this reason are more than usually liable to chills and rheumatic conditions.

The German authorities have not made any restrictions regarding the feeding of cattle, except to exclude oats from their dietary. Some owners, however, especially small farmers, have carried economy in feeding so far that their animals have visibly become greatly emaciated. Some animals have become so weak as to be unable to rise from the ground. These were clear cases of anæmia and hydræmia. The owners attribute this state of things to the fact that they are no longer able to purchase the stimulating foods which they hitherto have always used as additions to the diet. The greater part of these animals recovered with dietetic treatment, pasturage, and the administration of hydro-chloric acid; others became cachectic, and had to be destroyed.—(*La Clinica Veterinaria*).

[Scientifically, this note would have been far more interesting if fuller information as to the present feeding of animals in Germany had been given. But it has considerable interest for us for other than scientific reasons.—*Transl.*]

CATHETERISATION OF THE BITCH.

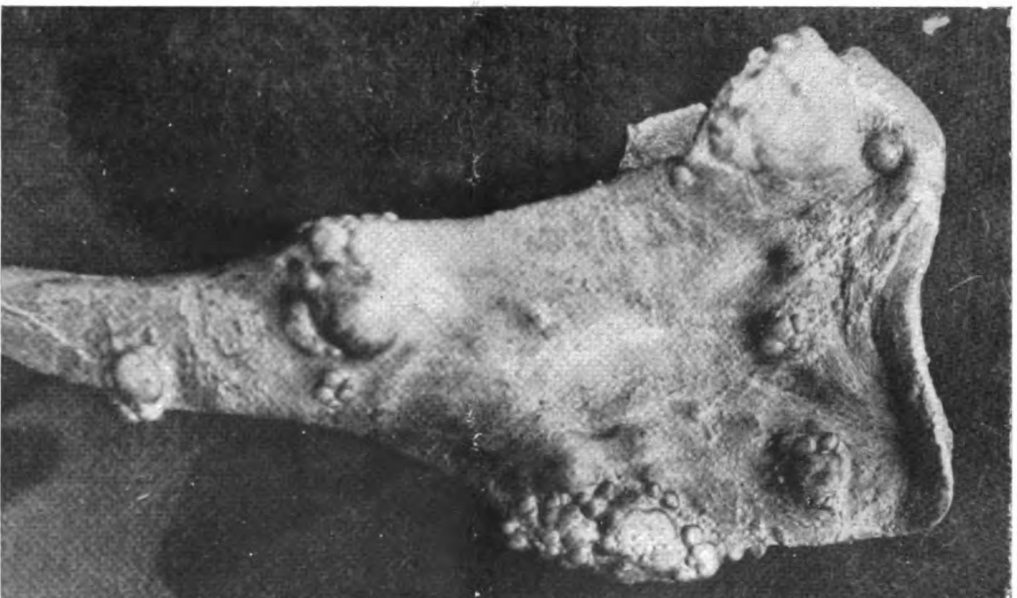
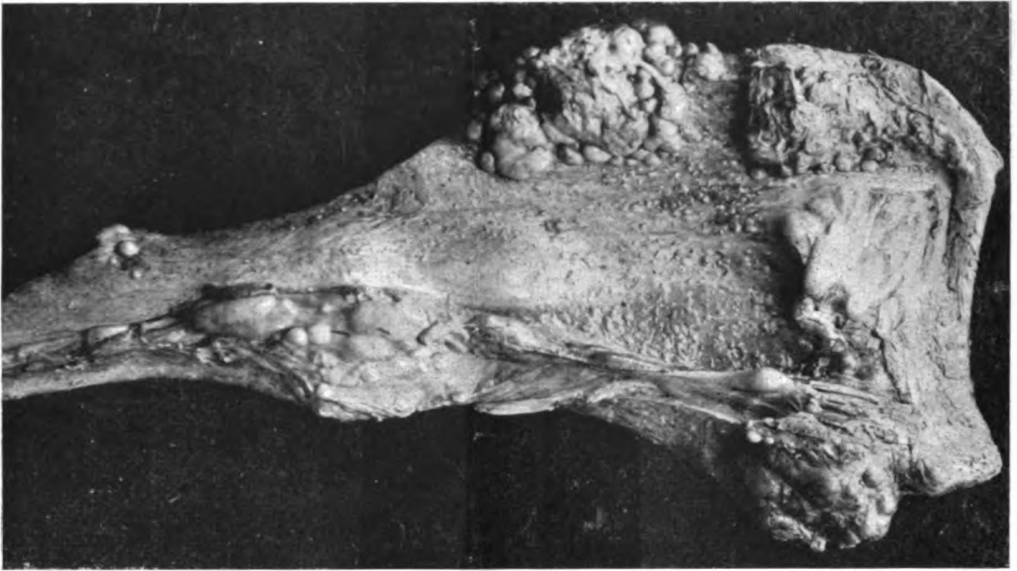
H. Jakob some time ago published an article upon this subject (*Münchener Tier. Woch.*). After reviewing the anatomical conditions and the special difficulties of catheterisation in bitches, he recommends the following procedure:—

The bitch is laid on her side; and the forefinger, cleansed and oiled, is passed through the vestibulum vaginae as far as the valvula vaginae, which then surrounds the finger-tip almost like a ring. The catheter, cleansed and smeared with liquid paraffin, is introduced and passed along the median line of the vestibulum vaginae. The forefinger in the vagina partially occludes the passage, and thus renders the catheter less likely to miss the ostium urethrae; and the finger can also be manipulated to direct the catheter aright,

In a bitch with a very wide vulva and roomy vestibule, Jakob modifies the procedure as follows: The forefinger, introduced as far as the hymen and slightly bent, is used to draw the entire vulva somewhat backwards; while the thumb and middle finger, placed respectively on the upper and lower vulvar regions, exercise a moderate pressure upon

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EQUINE TUBERCULOSIS—SHOWING BOTH SURFACES OF SPLEEN.

Recorded by Capt. J. D. Broome, A V C

them. By this method, in most cases, the catheter, when introduced, is hindered from slipping past the ostium urethræ. Here it must be remembered that the drawing backwards of the vulva brings the ostium urethræ nearer to the vulva lips, and that the ostium may be best reached by introducing the catheter in a direction level with the axis of the body. In these cases quite elastic or slightly bent metal catheters are absolutely necessary.

In small bitches the introduction of the finger and catheter together, or even of the finger alone, as far as the vulva vaginæ is generally impossible or accompanied with great pain to the animal. In these cases catheterisation is generally best accomplished by placing the thumb and forefinger on the external vulvar region, drawing the vulva backwards to a moderate degree, and then introducing the catheter from the middle of the vulvar lips, or, preferably, from the upper vulvar commissure. A moderate pressure of the fingers from the outside upon the region of the vulvar vaginæ, which in small bitches is not more than 1-3/5 in. away from the vulvar lips, generally prevents the catheter from missing the ostium urethræ.

The ostium urethræ may also be made actually visible by means of the speculum, and the catheter is then easily introduced. But most bitches resist this procedure, especially when the speculum is being opened.

As regards the choice of the catheter, Jakob prefers elastic instruments to metal ones. For disinfecting and preserving them, he advises the use of a glass cylinder coverable with a lid. Wadding, upon which two or three formalin pastiles are placed, lies upon the bottom of this cylinder. The pastiles constantly liberate formalin vapour, and so disinfect the catheters in the cylinder.

The thickness of catheters recommended by Jakob are as follows: for small dogs, up to two millimetres, for medium-sized ones, up to four millimetres, and for very large bitches five or six millimetres. (One millimeter=about 1/25 inch). The length of the catheter, even for the largest dogs, need not exceed 30 centimetres (=about 10 inches).—(*Berliner Tier. Woch.*)

ANTHRAX IN A GOAT.

Prof. Schlegel has recorded this case (*Zeitschr. f. Tiermedizin*, 1913). At 10 a.m. the goat in question was still bright and was feeding, and the milk yield was also normal. At midday she was found moribund, and death followed very speedily. At the post-mortem examination the body was tympanitic, much reddish foam was escaping from both nostrils, and sanguineous serum was flowing in drops from both ears. About half a litre (=about 7/8 pint) of turbid fluid was found in the abdominal cavity. The mucous membrane of the duodenum showed hæmorrhagic inflammation, and was covered with sanguineous intestinal contents. The thoracic cavity contained an eighth of a litre of fluid. Bacteriological examination revealed fairly numerous anthrax bacilli with distinct capsules.—(*Berliner Tier. Woch.*)

W. R. C.

THE CENTRAL VETERINARY SOCIETY.

[NATIONAL V.M.A. SOUTHERN BRANCH.]

The Annual General Meeting of the Society was held at 10 Red Lion Square, London, W.C., on Thursday, October 7th, Mr. F. W. WILLETT, President, in the Chair.

The following Fellows signed the attendance book:—Messrs. N. Almond, W. R. Clarke, W. R. Davis, G. H. Livesey, J. W. McIntosh, W. Perryman, J. Rowe, S. H. Slocock; Capt. P. Dayer Smith, A.V.C. (T.); E. Lionel Stroud, J. Willett; Prof. G. H. Wooldridge, and Mr. Hugh A. MacCormack, Hon. Sec.

Minutes. The minutes of the Last Annual General Meeting were taken as read, and confirmed, on the proposition of Mr. J. Willett, seconded by Mr. Roger Clarke.

Correspondence. The Hon. Sec. read a letter from Sir Stewart Stockman, intimating the withdrawal of his resignation, and gratification thereat was expressed on the part of the Society.

The Hon. Sec. also read a letter from Mr. Slocock with regard to subscriptions to the Victoria Veterinary Benevolent Fund, and the following letter from Mr. Shipley, acknowledging receipt of subscription:—

The Secretary,

Central Veterinary Society.

Dear Sir,—On behalf of my Council, may I acknowledge and thank you for your kind donation to the Victoria Veterinary Benevolent Fund.

It has arrived at a very opportune moment. We are now short of funds, and I hardly know where to look to continue our grants to Christmas next. Many of our subscribers are employed on military duties, and I have great difficulty in finding them; many are feeling the stress financially, and have, therefore, discontinued their help.

It would be a source of congratulation to our Council if, in spite of the handsome donation received from your Society, the individual members could be induced to become members of our Fund. I find that so many members of the profession think that if they subscribe through their Medical Society, there is little else to do; this is from the fact that they have not looked at the matter really seriously.

Half a guinea a year is little enough, but the amount of joy and pleasure we are able to give a widow or children, helpless through the loss of the bread-winner, should more than compensate them, and it seems to me that the pleasure of subscribing towards the support of the widow of one of our old College pals should be more than compensating.—Believe me, dear Sir,

Sincerely yours,

WM. SHIPLEY.

Prof. WOOLDRIDGE said if the letter was published in the minutes it might bear fruit.

The Hon. Sec. read a letter from the Russian Veterinary Society, as follows:—

Mr. President,—The Russian Veterinary Society at the meeting of March 18th, 1915, after listening to the report of the President of the Society, Mr. M. O. Lavrinowitsch, concerning the effect of the Austrian explosive bullets; decided to protest against the Austro-German infamies and atrocities, and resolved not only to print that resolution in the paper of the Society, *Messenger de Médecine Vétérinaire Sociale*, but to send it to all Veterinary Societies of our chivalrous allies, who, with us, are pouring out their blood with the idea of defending the right and civilisation. Accept, Mr. President, dear fellows—brothers—the assurance of our high esteem

M. O. LAVRINOWITSCH, President.

B. PROKOFTEFF, Secretary.

Mr. MACCORMACK reported that he had received the letter in July, and had taken upon himself to write, on July 29th, the following reply:—

Mr. President,—I have received your communication, but as this Society does not meet to transact business until the first Thursday in October, I shall be unable to bring the matter to the notice of the Fellows until then.

The HON. SEC. reported that a letter had been received from Col. E. Taylor, dated the 3rd July, regretting he was unable to reconsider the matter of his resignation, and asking the Society to accept it. Also a letter had been received from Major J. J. Griffiths, tendering his resignation. He had written and told Major Griffiths that the matter would be brought forward at the next meeting.

Prof. WOOLDRIDGE moved that a letter should be sent to the Russian Veterinary Society embodying the following resolution:—

"To our Russian confrères, greeting. This Central Veterinary Society, London, learns with great regret that it has been proved to the satisfaction of the Russian Veterinary Society that the Austro-Germans have been employing explosive bullets, and joins with them in severely condemning this practice and other Austro-German atrocities. The Central Veterinary Society will publish the protest in its proceedings and in the British veterinary press. This Society also wishes to take the opportunity of congratulating Britain's gallant ally, the Russian nation, on the glorious feats of arms of its noble army."

Mr. LIVESEY seconded the motion, which was carried with acclamation.

On the motion of Mr. McIntosh, seconded by Mr. J. Willett, the resignations of Col. E. Taylor and Major Griffiths were accepted with regret.

The SECRETARY read the following annual report and statement of accounts:—

REPORT OF COUNCIL.

Mr. President and Gentlemen,—The Council announces that the Session 1914-15 has been a successful one. Five Fellows have been elected, and three resigned.

We are very sorry to report the death of Mr. A. L. Butters. Mr. Butters was a very old Fellow of the Society, and regular attendant at our meetings. He has acted as President, Treasurer and Trustee, and represented the Society at numerous congresses. Some years ago the Society elected Mr. Butters as one of its Hon. Fellows in recognition of the valuable services he had rendered to it for so many years, and the Council deeply regret his loss; and also Lieut. J. W. Brownless, A.V.C. (T.), whose death occurred at the Dardanelles with the British Mediterranean Force.

We have pleasure in announcing that 65 of your Fellows are on active service with the different armies, or engaged in different capacities, at home and abroad.

The annual meeting was held in October, at which Mr. F. W. Willett was unanimously elected President. Ten ordinary meetings and two Council meetings have been held, with an average attendance of over 22 at the former.

On account of the war our annual dinner did not take place in November, it was postponed, and finally decided not to hold it. At the November meeting the President gave his presidential address.

We have to thank the following gentlemen for reading papers:—Prof. G. H. Wooldridge, "Some aspect of the question of Cruelty to Animals"; and Mr. W. R. Davis, "Influenza in the Horse." Both these subjects were so interesting and popular that three meetings each were occupied in discussing them. At our March meeting we

discussed the circular letter from the R.C.V.S., "Appeal for Veterinary Surgeons for the New Armies." At our July meeting we discussed the circular letter from the Eastern Counties Veterinary Medical Association *re* Compulsory Pupilage, and we hope to go further into the matter. We received an appeal from Mrs. Moore, wife of Brig.-Gen. J. Moore, P.V.O., British Expeditionary Force in France, *re* Comforts for the Veterinary Sections at the front, and we sent a donation. Publications were received from Lieut.-Col. J. D. E. Holmes (since deceased), and Mr. H. E. Cross.

Your Council are very pleased to note the numerous interesting and instructive specimens brought to the meetings, and they hope Fellows will continue to do so. The following gentlemen are to be thanked: Profs. G. H. Wooldridge and E. B. Reynolds; Messrs. G. H. Livesey, N. Almond, H. D. Jones, F. W. Willett, and R. Eagle-sham.

The balance brought forward and the receipts for the year amount £116 15s. 2d., the expenses £89 8s. 2d., leaving a balance of £27 7s. 0d., which the Council think satisfactory.

Prof. WOOLDRIDGE proposed that the report and balance sheet be adopted.

Mr. LIVESEY seconded the proposition.

Mr. J. WILLETT said the balance at the bank was now very low, and it would be necessary for the Society to be somewhat conservative in its subscriptions and donations during the coming year. A great many Fellows were on active service and were, therefore, only honorary members, paying no fees.

Prof. WOOLDRIDGE thought a number of members who were on foreign service would not rely on that order, but would continue to send their subscriptions.

The motion was carried unanimously.

ELECTION OF OFFICERS.

On the motion of Mr. J. Willett, seconded by Mr. Clarke, Mr. MACCORMACK and Mr. LIONEL STROUD were appointed scrutineers for the ballot.

President. Mr. Willett said, that being the last time he should occupy the Chair as President, he wished to take the opportunity of expressing his thanks to the Fellows for supporting him in the way they had done. He was especially grateful to those who had promoted and taken part in the discussions, and although his year of office had been at such a grave period in our history, and many of the members were unable to attend the meetings, he thought it would be the general opinion that the Society had found ample matter to interest those who had been able to attend. He hoped that any shortcomings of his would not be found to have lowered the deservedly high position of the Society, and he should always look back to the time when he was President with a great deal of pleasure. He had much pleasure in proposing as his successor in the Presidential Chair, Mr. Davis. Mr. Davis had been a very regular attendant for some years, and had contributed very materially to the success of the meetings on many occasions, being always able and willing to give the Society the benefit of his wide experience. He felt much indebted to Mr. Davis personally, and he was sure the Society could not have anyone more worthy to fill the office of President, nor one the members held in higher esteem.

Mr. MCINTOSH had much pleasure in seconding the proposal. [The motion was carried with acclamation.]

Mr. WILLETT then vacated the Chair, which was taken by Mr. Davis, who said he had great pleasure in accepting the office that had been given to him, and that he should do his best to further the interest of the Society during his term of office, and he hoped to obtain, and had no doubt he should obtain, the support of the Fellows in trying to carry on his duties.

Vice-Presidents. The following were elected: Messrs. F. W. Willett, G. H. Livesey, N. Almond and W. Roger Clarke.

Mr. E. Lionel Stroud proposed that Prof. WOOLDRIDGE be elected to the Council in the place of Mr. Clarke, who had been elected Vice-President.

Mr. McIntosh seconded the motion.

Prof. WOOLDRIDGE thought it was a good thing to introduce new blood into the Council, and said he would much rather stand down.

Mr. J. WILLETT said he also would like to retire.

Mr. MCINTOSH quite agreed that it was a good thing to have new blood on the Council in order to stir matters up, but it should be remembered that gentlemen who had been on the Council knew the routine of work, and matters were greatly facilitated by keeping some of the old stock.

Prof. WOOLDRIDGE pointed out that already on the Council there were seven Past-Presidents, so that there was plenty of old blood to keep things moving.

Mr. J. WILLETT thought men should be brought in who could attend the Council, now that so many were on active service who would not be able to be present for at least another year. The Council should consist of effective members for the time being. He, therefore, proposed in place of Mr. W. S. Mulvey, who was away on service, Mr. H. D. Jones. Mr. McIntosh seconded the motion.

Mr. J. WILLETT proposed that Mr. C. H. Sheather and Mr. W. Norman Thompson should also be elected to the Council to replace Messrs. Harrison and Reynolds, who were on active service. [This was agreed to.]

On the proposition of Mr. E. Lionel Stroud, seconded by Mr. F. Willett, the following gentlemen were elected *en bloc* as Council for the ensuing year: Messrs. J. Willett, S. H. Slocock, J. Macqueen, R. J. Foreman, W. Perryman, J. W. McIntosh, J. B. Buxton, T. S. Price, Prof. G. H. Wooldridge, Messrs. C. H. Sheather, H. D. Jones, and W. N. Thompson.

Mr. F. W. Willett proposed the re-election of Mr. E. LIONEL STROUD as Hon. Treasurer, and Mr. H. A. MACCORMACK as Hon. Secretary, and took the opportunity of thanking those gentlemen for their valuable services during his year of office.

Mr. McIntosh seconded the motion, which was carried with acclamation.

Mr. E. LIONEL STROUD briefly thanked the members for the confidence they had reposed in him, and thanked the late President for his kind words in making the proposition. He should do all he possibly could for the Society, but he hoped members would assist him in not making him write too many letters asking for subscriptions.

Mr. MACCORMACK also replied, thanking the President for the kind remarks he had made with regard to his assistance during the last year. It had been a pleasure to him to help, if he might use the term, in leading the President in the way he ought to go (laughter), and he thought he could very well do that after his eleven years experience as Hon. Secretary. At present he had not a paper on the list for the next Session, and he should like fellows to come forward and fill the gaps. The Society did not require anything very elaborate, but something which would provoke a discussion, and, as the late Mr. Hunting used to say, "leave a little meat on the bone so that the Fellows could gnaw at it."

On the proposition of Prof. Wooldridge, seconded by Mr. J. Willett, Mr. R. EAGLESHAM and Mr. ROGER CLARKE were elected Auditors.

The Hon. Sec. said there were at present two Trustees, Mr. Woodger and Mr. Slocock, but a third was necessary, and Mr. Woodger had asked to be relieved.

Prof. Wooldridge suggested that Mr. Woodger's resignation of Trustee be received with regret, and that Mr.

STROUD should be appointed a Trustee, so that when Stock was transferred dividends could be made payable to Mr. Lionel Stroud as Treasurer. That would save a good deal of trouble.

Mr. McIntosh proposed that the Trustees should consist of Messrs. S. H. SLOCOCK, J. WILLETT, and E. LIONEL STROUD.

Mr. Perryman seconded the motion, which was carried. It was agreed that the funds should be transferred from the late Trustees to the new ones.

Mr. LIONEL STROUD thought it was only right that as Mr. Woodger was no longer one of the Trustees a hearty vote of thanks should be accorded to him for his many years of service. Mr. Woodger was one of the original Trustees when the Stock was bought. He, therefore, had great pleasure in proposing that a letter should be written by the Hon. Secretary to Mr. Joseph Woodger thanking him in the name of the Society for the services he had rendered during the years he had been a Trustee.

Mr. SLOCOCK seconded the motion, which was carried unanimously.

The PRESIDENT said it was usual at the annual meeting to appoint a Dinner Committee, but he presumed that, as last year, the Society would not hold a dinner.

It was agreed that no dinner should be held this year.

Mr. MCINTOSH moved a very hearty vote of thanks to Mr. F. W. Willett for his conduct as President. He was sure the Fellows would all agree that Mr. Willett had had a very successful year, notwithstanding the period being a very strenuous one. Mr. Willett had been extremely popular, and had attended the meetings very regularly, and now that he had been reduced, as it were, to the ranks again, he hoped he would still come the meetings and assist in carrying on the work of the Society.

Mr. PERRYMAN seconded the motion. He thought the year had been a most successful one. He had some right, he believed, to second the motion, because he had known Mr. Willett longer than anyone else in the room as Mr. Willett was the first student he spoke of on entering the College in the Eighties.

Mr. SLOCOCK wished to be associated with the vote of thanks. He felt inclined to dispute with Mr. Perryman the number of years of friendship, because Mr. Willett had been a neighbour of his, as well as his father before him, and it had given him great pleasure to see such a good neighbour occupying the position Mr. Willett had occupied.

The motion was carried with acclamation.

Mr. F. W. WILLETT said it was very flattering to him to receive such kindness at the hands of Mr. McIntosh, Mr. Perryman and Mr. Slocock. He did not know that he deserved all the kind things said, but as they had been said he supposed he must have deserved them unknowingly.

A vote of thanks to the Chairman brought the meeting to a close.

HUGH A. MACCORMACK, Hon. Sec.

Veterinary Losses of the French and Italian Armies.

Our Italian contemporary, *La Clinica Veterinaria*, in its issue of September 30, gives the names of three Italian veterinary surgeons who have lost their lives in the war. As might be expected, the veterinary losses of the French army are much more heavy than this. *Le Recueil de Médecine Vétérinaire*, of August 15, reports the names of twenty-four French veterinary surgeons who have died in war, and nine who are missing.

PARLIAMENTARY.

In the House of Commons.

VETERINARY SURGEONS IN THE TERRITORIAL FORCE.

Mr. NEWDEGATE asked the Under-Secretary for War whether veterinary surgeons in the Territorial Forces will be given the same privileges as regards promotion as veterinary surgeons holding commissions in the New Army; whether he was aware that veterinary surgeons holding temporary commissions had been promoted over the heads of more experienced veterinary surgeons holding commissions in the Territorial Forces; and whether he was aware that many Territorial veterinary surgeons had, perforce, lost excellent practices through inability to attend to their business.

Mr. TENNANT: I can assure the hon. gentleman that careful attention is being given to the points raised in his question.

THE REBATE ON PETROL.

Tuesday, Oct. 19.

Finance (No. 3) Bill was considered in Committee, Mr. Whitley in the Chair. Customs and Excise:

CLAUSE 10.—(Additional Duty on Motor Spirit).

Mr. J. O'CONNOR: I beg to move, at the end of the Clause, to insert the following new Sub-section:—

"(4) Sub-section (1), Section eighty-five, of the Finance (1909-10) Act, 1910, shall apply to any person using motor spirit for any of the purposes mentioned in this Sub-section as it applies to any person using motor spirit for any of the purposes mentioned in Part I. of the Fifth Schedule of that Act, that is to say, for the purpose of supplying motive power to a motor car kept by (a) a clergyman of any religious denomination; (b) a duly qualified engineer in the exclusive employment of a local authority; or (c) a duly qualified veterinary surgeon, while the car is being used by the clergyman, engineer, or veterinary surgeon for the purposes of his ministry or profession, as the case may be, and the last preceding Sub-section of this Section shall have effect accordingly."

My object is to have extended to certain classes that favourable consideration with regard to motor spirit that has been extended to the medical profession. The Finance Act of 1909-10, which included the Finance Act of 1909, provided that there should be a certain reduction in the tax in the case of motor spirit used for supplying motive power to a motor car used by a duly qualified medical practitioner for the purposes of his profession. I suggested on the Second Reading that veterinary surgeons ought to have the same favourable consideration. This exemption and abatement in the interests of the medical profession no doubt was largely due to the sentimental consideration which we all entertain for those who are engaged in assuaging human suffering. I submit that everything that could be said on behalf of the medical profession can also be said with regard to the veterinary surgeons of the country, for they too, are engaged in assuaging suffering, not of human beings, but of dumb animals, and no doubt the sympathies of this Committee and of the country go out to all those who are engaged in diminishing the sum total of suffering, whether it be that of the human being or that of the dumb beast. We have at the present time this body of men engaged, I will not say exclusively, but in a greater degree now than before, in attending to cattle, and cattle at the present time may be said to be a national asset. I submit that when these professional men are engaged in attending upon cattle, they are engaged in attending upon that which is perhaps at the present time one of the greatest national assets.

Their duties arising from the administration of Acts of Parliament have also become very onerous. They have

largely to do with the administration of the Contagious Diseases (Animals) Acts. We depend upon them when there are outbreaks of cattle disease, such as rinderpest, and those terrible diseases which troubled us a few years ago. We have to depend upon them to administer all the other Acts relating to cattle, and I am reminded that the Tuberculosis Order gives them a great deal of trouble. Having regard to the fact that these men have to go long distances in order to administer these Acts, their duties can only be performed by the use of motor cars. Railway trains do not always serve their purpose. They do not serve the purpose of anybody engaged in some of the counties in Great Britain and Ireland, which are very extensive.

I submit that these gentlemen ought to be encouraged under the circumstances to provide themselves with motor cars. An extension of the privilege already enjoyed by the medical profession would be to some extent an encouragement to them to get motor cars, and I submit that it is in the very best interest of the country that they should be encouraged to provide themselves with every convenience for the exercise of their profession, from which we derive very great benefits indeed. I had the sympathy of the hon. Baronet the Member for the City of London (Sir F. Banbury) on the Second Reading, when he promised me his support when I moved my Amendment, and I know that I can claim that generous support which he always gives to good causes in this House to-day.

Sir F. BANBURY: I hope the Chancellor of the Exchequer will accept one portion of the Amendment, namely, that which relates to veterinary surgeons. There is a good deal to be said for allowing these gentlemen the facilities already accorded to doctors. They are both engaged in the healing of sickness and the alleviation of suffering—one in the case of mankind and the other in the case of animals. Indeed, the claim of the veterinary surgeons to be included is almost greater than that of the doctors, because they are paid lower fees than are usually charged by doctors. In country districts they have to travel very great distances, and I cannot conceive why they should not be allowed this privilege. With regard to the other part of the Amendment, I do not think I need say much. I do not suppose the right hon. gentleman will accept it. I see no reason for including engineers any more than other municipal officials. They are the servants of the ratepayers, and I cannot see why any particular class carrying on their ordinary duties should be exempt. I do not know whether many clergymen have motor cars. I do not think there are many in England, whatever may be the case in parts of Ireland, but I do not see why they should be included. I should not raise much objection to its being done, but, on the whole, I trust the right hon. gentleman will accept that portion of the Amendment which deals with veterinary surgeons, and reject the remainder of the proposal.

Mr. RONALD MCNEILL: I wish to support that part of the Amendment which deals with the case of veterinary surgeons. I rather agree with my hon. friend that no very strong case has been made out for the engineers, and I do not know whether there will be any great object in extending the privilege to the clergy. But there is a strong case for the veterinary surgeons. In normal times there are not very many of these gentlemen in many parts of the country. Now, a great many have gone to the front. They have joined various units of the Forces, and are doing Government work, and the consequence is that, although as a body they never were very numerous, they are now still more scarce, and farmers find it much more difficult than in ordinary times to get the assistance of veterinary surgeons sufficiently quickly perhaps to save the lives of valuable animals. A veterinary surgeon has now a much larger area of

country to cover than at ordinary times, and as this difficulty has arisen directly out of the war it is only fair, this being war taxation, that men who are doing such valuable work for the agricultural community should obtain every facility that can possibly be given to enable them to carry on their profession. It is only a matter of justice that this concession should be granted to them, for, although they deal with different classes of disease, they are still a part of the medical profession, and should be treated on the same footing.

Mr. McKENNA: I can assure my hon. friends that one is placed in a very difficult position when, after listening to forcible arguments extremely well put in support of a particular Amendment, he is obliged to advance a case on the other side. We all like to make concessions. It is a much pleasanter thing to do than to refuse them. But still it is for me to make out a case against this Amendment. What is the position with regard to veterinary surgeons, clergymen, engineers, or any other class of persons for whom this exception is sought? I will take the case of the veterinary surgeon. He has to choose in the course of the exercise of his profession whether he will use a horse and trap for purposes of locomotion, or whether he will adopt the motor car. If he takes the latter course, it is because he finds he can do his business better with it, presumably it is more profitable than a horse and cart. But he does not, therefore, make any reduction in the fees he charges. He makes greater profits.

Sir F. BANBURY: And what about the doctor?

Mr. McKENNA: That is another point. In the case of the veterinary surgeon, it is a trade expense. It is a question for him whether he will use one form of locomotion or another, and I submit to the Committee that on that ground no good reason is shown for extending the extension to him. The same is true of the clergyman and of the engineer. They have to make their choice of methods of locomotion. We are not forcing them to use motor cars. It is a matter within their own choice. As I expected, I have been asked how one is to distinguish between the doctor and the veterinary surgeon. The argument upon which the doctor was given the exemption was, not that he ought to get his petrol cheaper, but that it would place him in a position to reach his patient more quickly. It was a social advantage in the relief of sickness and the saving of life that he should be induced to use a motor car rather than a horse and cart. That was the argument, and I think it is an argument which is good for the veterinary surgeon as well. If my hon. friend will agree to drop any other claims for any other classes to whom that argument will not apply, I should be willing, on report, to consider the admission of veterinary surgeons to this abatement. But I beg that that inclusion, founded on that argument, shall not be made a ground for suggesting new concessions.

Mr. J. O'CONNOR: I have listened with very great pleasure to the sympathetic observations of the right hon. gentleman, and I readily and willingly accept his suggestion. I am perfectly prepared to drop the other portions of the Clause, if he will give the concession to veterinary Surgeons.

Mr. McKENNA: On Report. Mr. J. O'CONNOR: Yes.

Mr. PETO: I want to thank the Chancellor of the Exchequer for this concession to veterinary surgeons. For five years I have, in connection with the Finance Bill, put down Clauses with this object which have not met with the approval of the Chancellor of the Exchequer, and I am very glad that at this moment, instead of imposing fresh burdens on these men, and making it more difficult for them relieve suffering among animals, besides doing their regular work for the community, he has seen his way to make this concession.

Clause ordered to stand part of the Bill.

FOOT-AND-MOUTH DISEASE.

The existence of foot-and-mouth disease amongst animals on premises at Monkton Combe near Bath, has been confirmed to-day.

The usual precautions have been taken to prevent the spread of the disease, and an Order has been made prohibiting the movement of animals in a large area surrounding the infected farm.

Board of Agriculture and Fisheries, 21st Oct.

In the House of Commons—on the motion for the adjournment of the House,

Mr. ACLAND said that the disease had been confirmed in five of the suspected outbreaks reported from Monkton Combe. Reports of suspected disease had been received from another set of premises at Monkton Combe and from one in the adjoining parish of South Stoke. There were indications that the disease had been present unrecognised for a considerable number of days, and that some recent movement from infected premises had taken place.

Victoria Veterinary Benevolent Fund.

LONDON ORPHAN SCHOOL.

May I claim your indulgence to inform the members of the Victoria Veterinary Benevolent Fund who have helped in forwarding the election of Lawrence B. Farr to the above school, that the amount of votes polled was 372. Though not elected, this is very satisfactory for the first attempt.

It is hoped that every member who has votes, or influence to obtain votes, and will do so, will communicate with me before the next Election in January, when, with organised help, the election of this lad to such an excellent Institution should be assured. Faithfully yours,

WM. SHIPLEY.

Southtown, Gt. Yarmouth.

"Enule" Brand Veterinary Bougies of Corrosive Sublimate

These bougies have been introduced as a more satisfactory, and, incidentally, a more convenient means of treating vaginitis in cattle, particularly contagious granular or verrucose vaginitis, and all cases of balanitis, also of preventing infection after difficult parturition.

Treatment by these Corrosive Bougies presents several advantages as compared with antiseptic irrigations. Amongst these are:—the disinfecting agent is retained in contact with the affected tissues for a longer period than was possible by the older method, and while the probability of destroying the organisms *in situ* is thereby increased, the risk of infection being spread by means of vaginal or preputial discharges is greatly diminished.

The Bougies are most convenient to use, and the amount of medicament present in each is an exact and known quantity.

They are issued in boxes of 12, by Burroughs, Wellcome & Co. Each contains 1/25 grain of mercuric chloride.

ARMY VETERINARY SERVICE

Extract from *London Gazette*,
WAR OFFICE, WHITEHALL, Oct. 15.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieuts. to be temp. Captains:—

A. Jackson. Dated Sept. 18.

F. W. Trydell. Dated Sept. 28.

Oct. 16.

To be temp. Lieut.:—A. MacIntosh. Dated Oct. 4.

To be temp. Qmr. with hon. rank of Lieut.:—E. A. Germany. Dated Oct. 13.

Oct. 19.
 Capts. to be temp. Majors whilst holding the appmnt. of
 Asst. Director of Vety. Services :—
 H. A. Stewart. Dated July 30.
 W. H. Taylor. Dated July 31.
 To be temp. Capt. :—Temp. Lieut. W. Hamilton. Dated
 Oct. 6.
 To be temp. Lieuts :—
 R. Burriss. Dated Oct. 5.
 W. Bugg, J. H. Yates. Dated Oct. 7.
 Oct. 20.
 To be temp. Colonel while holding appmnt. of Dep.
 Dir. of Vety. Svces. :—Lt.-Col. H. T. Sawyer, D.S.O.
 Dated Oct. 21.
 Temp. Lieutenants to be temp. Captains :—
 J. Forrest, C. G. Thompson. Dated Oct. 10.
 Oct. 21.
 To be temp. Capt. :—Temp. Lieut. T. A. McClintock.
 Dated Oct. 9.
 To be temp. Lieuts. :—
 G. R. James. Dated Oct. 7.
 R. Garland. Dated Oct. 12.

SPECIAL RESERVE OF OFFICERS.

Oct. 19.
 Lieut. (on prob.) W. Kendrick is confirmed in rank.
 TERRITORIAL FORCE. ARMY VETERINARY CORPS.
 Oct. 18.
 To be temp. Capt. :—Lt. C. R. Chadwick. Dated July 1.
 To be Lieut. :—J. Crooks. Dated Oct. 19.
 Oct. 20.
 Lieut. J. Soulsby resigns his commission on account
 of ill-health. Dated Aug. 4, 1914.

The following casualty in the Mediterranean Expe-
 ditionary Force is reported :—
 DIED—Cpl. W. A. Singleton, 4154.

The A.V.C. Comforts Fund.

Dear Sir,—As winter approaches may I again appeal
 through the medium of *The Veterinary Record* on behalf
 of the Army Veterinary Corps Comforts Fund, which
 was organised last year, and which, through the very
 numerous contributions and generous support received,
 has proved itself of much benefit to those of the Corps
 on active service. Letters which I have published from
 time to time in *The Veterinary Record* have shown how
 greatly appreciated, by both officers and men, have been
 the gifts which the Comforts Fund has sent out.

In anticipation of the enormously increased needs of
 the coming cold season, I am making every effort possi-
 ble to collect supplies of knitted mufflers, helmets, caps,
 socks, gloves, mittens, etc., also warm underclothing—
 vests, pants, flannel shirts, sweaters, jerseys, are greatly
 appreciated, and I am glad to receive flannel pyjamas,
 serge bed jackets, dressing-gowns, for those of our men
 who may be invalided in the small "Red Cross" hos-
 pitals attached to several of the large Veterinary Camps.

It will be very helpful if the name and address of the
 sender is enclosed in each parcel, and, if possible, also a
 list of the contents.

I know I may rely on many of the kind subscribers
 and contributors who have supported the Fund so
 generously to again come forward, but in conjunction
 with the other members of the Ladies Committee, I
 have thought that the time has come to make a wider
 appeal. I have, therefore, undertaken to co-operate
 with Mr. Fairholme, Hon. Sec. R.S.P.C.A., in organising
 an entertainment which is arranged to take place at
 St. James' Theatre on November 16th (Tuesday), at
 2.30 p.m. Sir George Alexander has most kindly lent
 his theatre, and I am glad to say many of the leading
 artistes have promised their services.

The profits from this entertainment are to be divided
 between the Army Veterinary Corps Comforts Fund

and the R.S.P.C.A. Special "War Fund," for benefit of
 sick and wounded horses, and for supplying buildings,
 appliances, ambulances, etc., to Veterinary Hospitals
 with the Expeditionary Forces.

I hope that members of the Veterinary Profession,
 and of the Army Veterinary Corps, will endeavour to
 assist me in making this Matinee very successful by in-
 teresting their friends also in the entertainment.

I hope to be able, in your next issue, to give further
 particulars as to names of artistes, prices of tickets, etc.,
 and also to publish lists of gifts received.

Yours truly,

ADELAIDE M. MOORE.

Captain John Storie—An Appreciation.

The following appreciation by an old yeoman, who
 served for twenty-two years in the Lothians and Border
 Horse with Captain Storie, V.S., appeared in the
Haddingtonshire Courier :—"Many hundreds of old
 yeoman to-day mourn the loss of one, every inch a
 soldier, an enthusiastic yeoman, and a perfect horseman.
 He enlisted in the then Lothians and Berwickshire Yeo-
 manry nearly forty years ago as a private, gained pro-
 motion step by step in the days when that was a much
 slower process than since the outbreak of the present
 war, and some years ago was given his commission as
 veterinary surgeon. He would not have missed the
 annual training for anything, for he simply revelled in
 the drill over the sands at Belhaven. It was his proud
 boast that during his record period of service, his total
 number of days' absence could be counted on the fingers
 of one hand. With the exception of the Honorary
 Colonel, the Earl of Haddington and Lieutenant Player,
 no one was known to have put in so many years in the
 historic regiment. There was no 'side' whatever about
 him, and he was ready and willing to impart assistance
 at all times to recruit or officer who might not be so well
 informed concerning the drill as he was. For years he
 acted as a judge at the military sports, and his decisions
 never failed to give entire satisfaction. He was a very
 keen sportsman, and rarely a year passed in which one
 of his horses did not carry off one or more trophies at
 the races. Only some months ago he transferred from
 the Lothians and Border Horse for similar duty at
 Dunbar Cavalry Depot, where he was in attendance
 daily up till about ten days ago. His kindly, homely
 manner which gained friends for him wherever he went,
 and in military circles few men ever attained a greater
 measure of popularity. He lived a very busy life, and
 withal was always at the call of the many who, from day
 to day, over a very wide district, sought his professional
 advice and assistance. In all the stewardship of life he
 was loyal and true. His mental alertness, his nobility
 of character, his fund of humour, and his well-stored
 memory of reminiscences, made him the centre of a very
 wide circle of staunch friends."

THE COLLEGE FINANCES.

Sir,—In view of the present financial crisis, and to avoid
 the loss arising from the sale of Consols now proposed by
 Council of the R.C.V.S., I should like to suggest that every
 member should forthwith be invited to make a voluntary
 subscription to College funds of half-a-guinea per annum
 until the proposed Bill has become law, on the understand-
 ing that the receipt for such voluntary subscription, together
 with a further sum of 10/6, shall be deemed to be the equi-
 valent of, and be accepted by the authorities as, the fee of
 one guinea, which would then become recoverable from
 every existing M.R.C.V.S.

This arrangement would, I think, put it within the power
 of each one of us to do "our bit" for the College, without
 it costing us anything at all, unless, indeed, we should
 die before the Bill is "born": but in case there are any
 who are afraid lest they might grieve, *post-mortem*, over the

possible loss of what they had paid, it might be understood that the vouchers for such payments could be disposed of with the rest of their professional chattels, and be taken over by their successors: so that, even in the case of those whom "the Reaper" has mowed down, there need be no loss.—Yours, etc.,

Oct. 20. E. H. CURBISHLEY.

THE REBATE ON PETROL.

Sir,—Both Col. Alan J. Sykes and J. F. L. Brunner have promised me to vote for J. O'Connor's amendment in the matter of rebate on petrol.

I think if veterinary surgeons would only explain the facts to the local M.P. they would have no difficulty in obtaining their support.—Yours faithfully,

Heathside, J. NORBURY, M.R.C.V.S.
Knutsford, Cheshire, Oct. 19.

FEES PAID BY INSURANCE COMPANIES.

594 Bath Road,
Bristol, Oct. 6th, 1915.

Dear Sir,

Re Insurance.

I received papers (herewith) from Mrs. Norman, whose husband is on active service, and I am helping him with his practice. Butcombe Court is seven miles from my residence. For the journey and examination the fee of 2/- I think is an insult to the veterinary profession.

Note the list of fees ordered to the veterinary profession. Surely we ought to combine and get better fees.

I should like to have your advice on the matter.

Kindly return papers.—Yours faithfully,

GEO. BISHOP.

UNION ASSURANCE SOCIETY, LIMITED,
24 Clare Street,

Bristol, 4th October, 1915.

G. D. Norman, Esq., M.R.C.V.S.,
West Town, near Bristol.

Dear Sir,

We shall be glad if you will kindly examine the animal mentioned in the Schedule and let us have your report on the enclosed form at your early convenience, when we shall be pleased to remit you the fee shewn thereon.

Yours faithfully,
JAS. BOLTON, Branch Manager.

[The following are the terms and scale of fees referred to. The schedule is for—One crossbred Kerry and Jersey cow, aged about 7 years, valued at £25].

Instructions for Veterinary Surgeon.

Kindly examine the Animals mentioned in the Schedule, and furnish your Report on the enclosed form, answering the questions on the front, and filling in the Schedule on the back.

The fee for this inspection, to cover all expenses, is marked on the Report form. Veterinary Surgeons will be paid their fees at the end of each quarter.

Kindly forward your Report with as little delay as possible; but should you be unable to make this inspection, a line to that effect will much oblige.

Union Assurance Society, Limited.

Live Stock Department, 17 Pall Mall East, London, S.W.

VETERINARY SURGEON'S REPORT ON STOCK FOR INSURANCE.

This is to Certify that I have carefully examined and valued the Animals belonging to

of Gatcombe Court, Flax Bourton, described in the Schedule on the back hereof, and that I have answered the questions below to the best of my knowledge and belief.

Signed
Address

Date 191 Fee 2/-

1st.—Are the whole of the Animals of the class on the Premises or Farm included in the Schedule on the other side?

2nd.—If not, what animals are excluded, and why?

3rd.—(a) For what purpose are the Horses employed?

(b) Are they free from vice?

4th.—If any Mares examined are in foal, please state whether it is the first foaling, or the year of last foaling, if known?

5th.—How many Animals are kept in each Building?

6th.—Does the Proposer or his servant live on the Premises, and if not, how far off?

7th.—Are the Animals (a) practically sound and healthy?

(b) in good condition, well kept, and regularly fed? and

(c) Do you recommend the Directors to accept the Animals for Insurance?

NOTE.—The Fees payable for the Examination of Stock are according to the Society's printed Scale, which may be had on application. Fees will be remitted at the end of each quarter to Veterinary Surgeons direct.

Veterinary Surgeons' Fees.

For examining Stock when proposed for Insurance:—

Horses up to £50 insured value	4s. 0d. each
" " " over 3 Head	3s. 0d. "
" over £50 up to £80 insured value	5s. 0d. "
" " £30 and up to £100 "	7s. 6d. "
" " £100 " " "	10s. 6d. "
Dairy Cows and Bulls, for single animals	2s. 0d. "
" " " for 2 Head	1s. 6d. "
" " " 3 to 10 Head	1s. 3d. "
" " " excess of 10 Head	1s. 0d. "
Young Heifers and Bullocks	1s. 0d. "
Pigs	0s. 8d. "
Sheep for 12 months	2s. 6d. per score

Fees for over six Horses or for large stocks, as may be arranged by the Head Office.

No veterinary examinations are to be ordered by Agents on animals upwards of 12 years of age, nor, in case of renewals, without instructions from the Society.

For examination and identification on Death when specially instructed by Head Office:

Horse	each	10s. 6d.
Cattle	"	5s. 0d.
Sheep and Pigs	"	2s. 6d.

The above Fees cover all expenses.

On examination of an animal, the Insurer is required to furnish, at his own expense, a certificate from a Veterinary Surgeon, on the Society's printed form, giving particulars of the illness, Cause of Death, age and value.

Famous Shire Horses.

The late Lord Rothschild's great stud, to be dispersed without reserve by Messrs. Sexton, Grimwade and Beck, at Tring Park, Hertfordshire, on Thursday, has contributed much to the building-up of the Shire breed in modern times, and has established many records in the show-yards and sale-rings. Never before have so many valuable Shire stallions, the sires of many of the best animals in the country, been catalogued together, no less than three London and two Royal show champions were

included. There were altogether fifty-one stallions, mares, fillies and foals to be sold.

From the time of its establishment a quarter of a century ago, the Tring Park stud of Shires, under the able direction of Mr. Richardson Carr, has been managed in the ways most calculated to render the greatest possible service to the tenant farmers of the country, this having been the late Lord Rothschild's aim in founding and maintaining it. Prominent characteristics of the horses bred and used have always been great bone, size, and true Shire type. No animal that did not come up to the high standard of excellence recognised has ever been retained for breeding purposes.

Amongst the noted sires included in the sale are Childwick Champion, Champion's Clansman, Babingley Nulli Secundus, Blaisdon Jupiter, Halstead Royal Duke, and Halstead Blue Blood. Childwick Champion, foaled in 1903, was got by Childwick Majestic, dam the prize mare Blythwood Laurel, by Ereall Wynn; he was first at all the leading shows in 1905, being first and reserve for the championship at the Shire Horse Society's London Show in 1905 and 1908; he is sire of Champion's Goalkeeper, the London champion in 1913 and 1914, and sold for 4,100 guineas, also of Lorna Doone, the champion mare in London in 1914 and 1915. Many other noted winners were sired by him. Then Blaisdon Jupiter, by Montford Jupiter, was the London champion this year; Babingley Nulli Secundus was first and reserve champion in London in 1911, and was got by Calwick Blend; Halstead Blue Blood, by Lockinge Forest King, was first at the Royal Show in 1908 and 1910; and Halstead Royal Duke, also by Lockinge Forest King, was champion at the Royal Show in 1908,

and champion in London in 1909. Another grand horse is Champion's Clansman; he has been let for three seasons to His Majesty the King.

Among the mares and fillies are many great prize winners, and they have been mated with the best of the Tring horses. The mare Belle Cole, by Crossmoor Carbon, was champion in London, at the Royal Lancashire and Peterborough; Lilleshall Countess, by Dunsmore Jameson, has won leading prizes at the Royal, Peterborough, Wirral, and Birkenhead, etc.; Rickford Dazzle, by Childwick Champion, has been a frequent winner; Desford Future Queen, by Lockinge Forest King, is a Royal and Royal Lancashire champion; Cattlegate Rose, by Birdsall Menestrel, has also won many distinctions.

Several of the animals sold at the last Tring sale, which was held in 1913, have won prizes practically ever since at all the leading shows. These include Champion's Goalkeeper, twice champion in London, and Halstead Duchess VII., champion of the Royal at Bristol and the Royal Lancashire. Three of the first-prize winners at the Royal Show this year were bought at Tring in 1913. The first four colt-foals at the Royal and the Peterborough shows were by Childwick Champion or one of his sons.

The discontinuance of a stud maintained and managed on such generous and far-seeing lines is greatly to be regretted from every point of view, but the dispersal of the animals throughout the length and breadth of the country, and for the good of the country, would have been the late noble owner's wish, and there is little doubt that this fact will be rightly appreciated.—*Daily Telegraph*.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.		Outbreaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended October 16	1	3			2	3	6	16	1	61	302
Corresponding week in											
1914 ...	15	16			1	5	†	†		126	1108
1913 ...	16	17					24	32		58	575
1912 ...	12	13			5	6	15	22	1	42	912
Total for 42 weeks, 1915 ...	456	520			40	72	||666	||1433	165	3330	14575
Corresponding period in											
1914 ...	594	652	22	108	83	255	†1530	†2642	155	3510	34049
1913 ...	445	491			124	301	2055	4085	137	2005	26512
1912 ...	630	712	92	639	148	268	2461	5256	183	2442	32735

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked: Durham 2, York, W. Riding 1
Board of Agriculture and Fisheries, October 19, 1915 || Figures for twenty-nine weeks only.

IRELAND.		Week ended Oct. 16	...	...	...	...	...	Outbreaks	7	7	58
Corresponding Week in	1914 ...	...	...	...	...	...	...	1	7	4	4
	1913 ...	...	...	...	...	...	...	...	9	1	11
	1912 ...	...	...	11	20	...	...	1	11	2	6
Total for 42 weeks, 1915		...	1	1	...	...	1	3	62	333	1195
Corresponding period in	1914 ...	...	1	1	76	957	...	...	69	425	858
	1913 ...	...	...	...	...	...	...	...	108	413	769
	1912 ...	...	3	3	42	289	2	3	56	283	1540

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Oct. 18, 1915
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1425.

OCTOBER 30, 1915.

VOL. XXVIII.

THE REBATE ON PETROL.

We are able this week to announce that the Chancellor of the Exchequer has intimated to our President that he will extend to veterinary surgeons the concessions allowed to medical men in connection with the duty on motor spirit. We shall all agree in thanking Mr. McKenna, for the petrol rebate is now much more important to us as a profession than it was when we first asked for it. We shall equally agree in thanking those members of Parliament who by their efforts in the House were instrumental in obtaining the concession, and those others who gave us the weight of their support; but very much is also due to the judicious and persistent efforts of our President, who in this, as in several other difficult questions has given such material assistance to the profession. Most members of Council, R.C.V.S., understand what is involved in this work: few outside the Council have a clear conception of it.

The reasons which apparently induced the present Chancellor of the Exchequer to grant this concession were urged upon his predecessor, without avail, and were as applicable five years ago as to-day, the altered conditions consequent upon the war alone being added to the argument. But veterinary surgeons, many of whom were at that time rather averse to motor cars, have now recognised their supremacy for practice; the number of those using them is increasing rapidly—and will continue to increase. Many practitioners could not get through the amount of work they now do without the cars, the rebate, therefore, is a concession which affects a very large proportion of the profession.

THE FUTURE SUPPLY OF PRACTITIONERS.

Few members, perhaps, have yet attempted to think out the probable ultimate effects of the war upon the supply of civil practitioners. It would be premature to do so very fully; but one or two things may be safely prophesied for the first few years of peace. Certainly there will be a decrease—perhaps a considerable one—in the number of new graduates. It is more than possible that there may be a permanent increase in our standing army, with a corresponding drain upon us for its veterinary service; and, whether this be so or not, we may be quite sure that the number of civil appointments at home and abroad will augment. On the whole it seems clear that, for at least a few years after the war, there will be fewer veterinary graduates leave the schools to take up private practice than ever before.

SEPTIC PNEUMONIA AND PLEURISY.

I have had a few cases among remounts, the symptoms and post-mortem appearances being similar in each case. I append details hoping that others having experience of the disease may give their opinion as to its nature and cause.

Symptoms. Loss of appetite, disinclination to move, eyes bulging, mucous membranes slightly injected, slight glairy yellowish discharge from nostrils. Temperature 105° to 107°: pulse accelerated and thready: respirations slightly increased, breath very foetid. Animal grunts when made to move or if pressure applied to chest; auscultating chest reveals a tingling sound. Death supervenes after a period of three to ten days without any exaggeration or change of symptoms.

Post-mortem. About two and a half pints of stinking yellowish fluid in pleural cavity, a thick yellow fibrinous deposit on pleura, simulating that seen in tubercular pleurisy in cattle. The lungs are dark in colour and affected with interstitial pneumonia.

The disease shows no tendency to spread to other animals. In this, and in the fact of it always proving fatal lies, in my opinion, its peculiarities.

J. Fox, M.R.C.V.S.

EQUINE TUBERCULOSIS.

The subject of this note was a bay heavy draught gelding, six years old, which was sent to the Mobile Veterinary Section for evacuation, with a report from the veterinary officer that for some time past the animal had suffered from intermittent fever.

The mallein test (subcutaneous injection) was applied, and a very suspicious local swelling resulted, but there was not any rise in temperature.

The case was reported to Lieut.-Colonel A. W. Mason, A.V.C., who directed me to apply the intra-palpebra-dermal test, the result of which was indefinite. The animal was in poor condition, and was destroyed.

Post-mortem examination was made by Colonel Mason and myself, and revealed the fact that the cause of the illness was tuberculosis. The spleen showed two recent tubercles in its substance.

The pleurae, both costal and pulmonary, were extensively affected: the lesions (grapes) exactly simulating those commonly found in "advanced" cases of bovine tuberculosis.

The rare occurrence of thoracic lesions in equine tubercle makes the case of sufficient interest to record it.

A. N. FOSTER, Capt. A.V.C.

24th October.

ABSTRACTS FROM FOREIGN JOURNALS.

THE DEVELOPMENT OF THE PARASITE OF EPIZOOTIC LYMPHANGITIS IN THE HORSE.

A. Boquet and L. Nègre record the result of experiments they have made upon this question (*Bull. Soc. Path. Exot.*, 1915, May, Vol. 8, No. 5. Pp. 248-250). They have attempted to infect horses by subcutaneous, intradermic, and intravenous inoculation with pure cultures of the seventh and ninth generations of the cryptococcus; but so far they have failed to set up the disease with the characteristic lesions. They have, however, constantly obtained a result which requires further investigation and verification, but which they think it advisable to publish pending their being able to return to the study of the subject.

A horse which had never shown any evidence of being infected was inoculated with a pure culture by both the intradermic and subcutaneous methods at different parts of the body, and as no evidence of infection had appeared after an interval of two months it was given an intravenous inoculation with 1 c.c. of a similar culture. Three weeks later an area of oedema appeared on the forearm about 15 centimetres below one of the points where intradermic inoculation had been practised. This persisted for about a week, and the spot was subsequently marked by a slight loss of hair and an elevation of the epidermis.

Microscopic examination of the epidermis showed the following structures in small numbers. These were typical double-contoured cryptococci, rather large rounded forms, some of which showed evidence of budding, collected together into masses of 10 to 15, and short thick-walled filaments which were swollen at one end exactly like the chlamydo-spores observed in the cultures. The lesion subsequently healed. No structures of the same type could be found in materials scraped from other parts of the skin.—(*Trop. Vet. Bulletin*).

DSHIBURIAK.

Goiachowsky describes a frequently fatal equine disease which is known to the inhabitants of the lower Ural region by the above name (*Weterinaryi Wratsch*, 1913). The disease is caused by the horses eating a plant of the centaurea species (= *Centaurea Picris* Pall.) with their food. In some districts immediately adjoining the river, where the plant grows in marshy places, hundreds of horses die from the disease every year. The horses avoid the plant as long as possible, but are often forced to eat it by scarcity of other food.

The first manifestation of the plant's toxic action takes the form of colicky symptoms. After two or three hours paresis of the lips, especially of the under lip, and also of the tongue and masticatory muscles, sets in. The paralysed and pendulous lower lip is constantly in motion; and this symptom imparts an aspect sufficiently characteristic to enable the disease to be diagnosed at a distance. Sometimes the head and neck are persistently held to one side. The animals are not able to drink, on

account of the paralysis of the lips and tongue; but, as the paralysis does not extend to the œsophageal muscles, it is possible to administer draughts to them.

The local Cossacks treat the milder cases by administering decoctions of liquorice root in milk, by doses of brandy, and by driving the animals till sweating is produced. In the more severe cases all treatment is regarded as hopeless, and the animals are slaughtered.

Goiachowsky, supposing that the paralysis of the lips and tongue might disappear in time, attempted to treat two cases by introducing fluid nourishment through a tube. Both animals, however, died, one after sixty and the other after sixty-four days. Various drugs were also used—laxatives, morphia, chloroform, and chloral hydrate at first; arecoline, pilocarpine, and strychnine afterwards—but no effect upon the paralysis of the lips and tongue was produced. The author's view is that the affected horses finally die in consequence of hunger and thirst.—(*Berliner Tier. Woch.*).

W. R. C.

Royal College of Veterinary Surgeons.

SPECIAL MEETING OF COUNCIL.

A Special Meeting of Council was held at the College, 10 Red Lion Square, London, W.C., on Friday, the 22nd inst., when the following members were in attendance:—Mr. F. W. Garnett (President) in the Chair; Messrs. Banham, Burt, Sir John M'Fadyean, Messrs. Mulvey, Price, Prof. Shave, Mr. Slocock, Major-Gen. Thomson, Mr. R. C. Trigger.

Minutes. The minutes of the previous special meeting were read and confirmed.

Apologies for absence. The SECRETARY reported that apologies for absence had been received from Dr. Bradley, Messrs. Clarkson, Dunstan, Howard, Lawson, Principal McCall, Dr. McCall, Col. Mason, Major-Gen. Pringle, Mr. Shipley, Sir Stewart Stockman, Mr. Wharam.

DIPLOMA IN VETERINARY STATE MEDICINE.

The Regulations for the Diploma in Veterinary State Medicine, as passed at the previous meeting of Council, were adopted as bye-laws of the College, and confirmed.

BYE-LAW 10.

The PRESIDENT moved that the following alteration to Bye-Law 10, passed at the previous meeting of Council, be confirmed:—

"The day for the meeting of the Council required by the Charter to be held within one calendar month after the Annual General Meeting for the election of the President, two Vice-Presidents, Treasurer, Secretary and Registrar, shall be fixed by the President as early as convenient."

This was seconded by Mr. Mulvey, and carried.

SCHEDULE I.

Sir JOHN M'FADYEAN moved: That the conditions relating to required subjects in the Preliminary Educational Examinations shown at page 93 of the Register, be amended to read as follows:—

"Subject to the conditions indicated in the foregoing list, the Preliminary Examinations recognised by the Council are required to include the following:—

- (1) English.
- (2) Mathematics (Arithmetic, Algebra and Geometry).
- (3) and (4) Two of the following subjects:—Latin, Greek, French, German, or any other modern language (Grammar; Translation into English from unprescribed books; Translation from English.)"

This was seconded by Maj.-Gen. Thomson and carried.

Mr. MULVEY moved: "That the necessary alterations to Schedule I, consequent on the report of the Preliminary Examination Committee, be adopted."

Gen. THOMSON seconded the proposition, which was unanimously carried.

WAR EMERGENCY.

The PRESIDENT reported that several inquiries had been received from veterinary students with respect to their situation in regard to the new recruiting scheme, and it was resolved:—

"That in the opinion of this Council it is not in the national interests that Veterinary Students should be enlisted at the present time."

"That the President be authorised to communicate this resolution to the War Office, giving reasons therefor, and to request that no *bona-fide* student enrolled and in attendance at a Veterinary College should be accepted for enlistment."

ANGLO-FRANCO-BELGIAN VETERINARY RELIEF FUND.

BRITISH COMMITTEE.

A meeting of the newly formed British Committee of the Anglo-Franco-Belgian Veterinary Relief Fund was held following the Special Meeting of Council. There were in attendance:—Messrs. A. H. Archer, G. A. Banham, W. Burt, W. R. Davis, Jno. A. W. Dollar, F. W. Garnett, G. H. Locke, H. A. MacCormack, Sir John M'Fadyean, Messrs. T. S. Price, E. S. Shave, S. H. Slocock, Maj.-Gen. H. Thomson.

Appointment of Chairman. Sir JOHN M'FADYEAN proposed that Mr. F. W. Garnett, President of the Royal College, be elected Chairman of the Committee. This was duly seconded, and carried with acclamation.

Mr. F. W. GARNETT, on taking the Chair, said: Gentlemen, I can only thank you for placing me in this position. I will promise to do all that I can in every way to make the Fund a success. I am informed that letters of apology for absence from this meeting have been received from the following:—Dr. Bradley, Messrs. J. Clarkson, H. J. Dawes, J. Dunstan, A. Gifton, P. J. Howard, A. Lawson, Principal McCall, Maj.-Gen. R. Pringle, Messrs. Roach, W. Shipley (who sends a donation of three guineas), W. A. Taylor, and R. C. Trigger.

The next business is to confirm the constitution of the Committee. All of us here are aware that at the meeting held on the 8th inst., we passed a resolution to the effect that the Presidents and Secretaries of all the local Veterinary Societies should be on the Committee, in addition to the Members of Council, and that the Committee should have power to add to its number. The minute reads as follows:—

"That a Committee be formed in the United Kingdom for the purpose of collecting money for the Anglo-Franco-Belgian Veterinary Relief Fund, and that it be composed of the Members of Council of the Royal College of Veterinary Surgeons, the Presidents and Secretaries of the different Veterinary Associations, and that it shall include all the British Members of the Central Committee together with Mr. Bullock. The

Committee should also have power to add to its number."

It was thereupon resolved that the minute constituting the Committee be confirmed.

The CHAIRMAN: We now have to proceed to the appointment of officers.

Sir JOHN M'FADYEAN: I beg leave to propose, Sir, that we appoint two Hon. Treasurers, and that the subscriptions to the Fund be lodged at the bank in their joint names, and I move that we appoint Mr. Dollar and Mr. Price as Hon. Treasurers. They are both in London, and it is convenient that the Treasurers should be within easy reach. It is not likely that they will have to pay out more than one or two cheques for expenses, for it is intended that the Fund should accumulate to be handed over in one sum to the Central Committee at the conclusion of the war. Cheques would, of course, have to bear the signatures of the two Treasurers.

Gen. THOMSON: I beg to second the motion that Messrs. Dollar and Price be elected joint Treasurers, and that the Funds be lodged in their joint names.

On being put to the meeting this was carried unanimously.

Sir JOHN M'FADYEAN: It will probably be generally agreed that whether it be open to exception to appoint two Treasurers, there can be no objection to appointing two Hon. Secretaries, in order that they may share the work, and I therefore propose that Sir Stewart Stockman and Mr. Bullock be appointed Hon. Secretaries to the Fund. Sir Stewart Stockman I propose because, like Mr. Dollar, he is on the French Committee and is well acquainted with a number of members of the Central Committee, and I need not give any reason for proposing Mr. Bullock, who has qualifications which in every respect make him invaluable.

The CHAIRMAN: I am very much in favour of having Sir Stewart Stockman as one of the officers, for the same reason as that mentioned with regard to Mr. Dollar, because then we have two of our officers on the French Committee, which will have the actual allotting of this Fund after it has passed out of our hands.

The Chairman put the motion to the meeting, which was unanimously carried.

A general discussion followed on the best method of collecting funds, and it was agreed that it should be left to the officers to draw up an appeal to be issued to the Veterinary Associations, and to take any other steps which appeared to them necessary, it being understood that a list of subscriptions would be published from time to time in the veterinary press.

It was also decided that the offices of the College should be the headquarters of the Fund, and that all subscriptions should be addressed there.

At the close of the meeting the following subscriptions were received:—

Mr. G. A. Banham, Cambridge	£10	0	0
Mr. Jno. A. W. Dollar, London	10	0	0
Mr. F. W. Garnett, Windermere	5	0	0
Sir John M'Fadyean, London	10	0	0
Mr. T. Salusbury Price, London	10	0	0
Mr. W. Shipley, Great Yarmouth	3	3	0
	£48	3	0

Since received:—

Mr. W. J. Mulvey, London	1	1	0
Mr. W. Packman, Bury	2	2	0

The *Bristol Times and Mirror* draws attention to the fact that no pigs have been sold in Bristol market for over twenty years owing to the restrictions as to movement of swine.

ANNUAL REPORT OF THE CIVIL VETERINARY DEPARTMENT, UNITED PROVINCES, 1914-15. E. W. OLIVER, M.R.C.V.S., F.Z.S., Superintendent.

There are features common to most of these reports which tend to deprive them of a certain amount of freshness in reading: yet as a continuous record of improved conditions of the domesticated animals in the enormous districts controlled by the veterinary staffs, with a constant reaching forward for yet further improvement, such work and the accompanying *esprit de corps* may well be kept in remembrance by those of us whose lives have to be spent in less stirring surroundings. The following extracts give a fairly full outline of the year's progress:—

I held charge of the department throughout the year, and Mr. C. W. Wilson carried out the duties of second Superintendent. I was on tour for 133 days and travelled 17,352 miles by rail and 686 by road. I visited 22 districts, making inspections of veterinary hospitals and dispensaries, district stallion stands and cattle-breeding centres, as well as other departmental institutions.

Mr. C. W. Wilson was on tour 115 days, during which time he travelled by rail 8266 miles and 1719 miles by road. His tours ranged in 24 districts.

M. Niaz Muhammad, Deputy Superintendent, was on tour for 208 days and travelled 7548 miles by rail and 1415 by road. He visited 17 districts.

Mr. T. S. Davies, probationary Deputy Superintendent, was 22 days on tour and travelled 1727 miles by rail and 187 by road. His tours, which were chiefly in connection with outbreaks of animal epidemics, inspection of the department's farms, depôt, etc., were made with a view to gaining practical experience of the work."

The varied duties on these tours included inspections of breeding farms and stud animals, experimental sheep flocks, ponies of Tonga lines, working bullocks, horse and cattle fairs; investigations of outbreaks of contagious disease; and, wherever possible, the introduction and the checking of preventive inoculation. Animals were purchased for the Government farms: sites for new hospitals were inspected.

VETERINARY INSTRUCTION.

Up to the present there has been no veterinary college or school in connection with the United Provinces, which have hitherto either been dependent on other provinces for their recruits, or have found it necessary to send their own selected candidates to Bengal or Lahore for veterinary training. There still appears to be some reluctance on the part of students to go a long distance into another province to study, and hence some difficulty is experienced in obtaining suitable candidates. An institution for the training of our own veterinary assistants has now become desirable, and the establishment of a veterinary college in these provinces is worth consideration.

Mr. T. S. Davies, who had been undergoing a special training in the Bombay veterinary college, has duly passed his examination and joined the department as probationary Deputy Superintendent on January 1st, 1915.

The practice of deputing newly joined veterinary assistants to the Imperial laboratory at Muktesar has now been altogether discontinued, as the veterinary colleges provide suitable training for their students in inoculation methods. Moreover the facilities now at hand in the department itself for giving practical instruction to these men in the field has removed the necessity for their deputation to Muktesar for that purpose. Practical demonstration in pathology and bacteriology is

now available at the new research station and headquarters laboratory in Lucknow which now afford the young veterinary assistants greater facilities for obtaining sound scientific experience.

The United Provinces Veterinary Medical Society, which was started in 1912 by the members of the civil veterinary staff, appears to be doing good work, and is greatly to be encouraged as means of keeping the members up to date in their scientific knowledge, and promotion and interchange of professional ideas. Much good work has been done by means of lantern demonstrations dealing with veterinary work and with live stock generally.

The Deputy Superintendent, M. Niaz Muhammad gave lectures to cultivators and others at the Aligarh, Bulandshahr, Muzaffarnagar and Meerut fairs. I personally lectured to the students of the Colvin taluqdar school on the domestic animals of India, and to the Cawnpore, Allahabad and Lucknow squadrons of the United Provinces Horse on horse management. I also read a paper on cattle breeding at the recent co-operative credit conference.

Bulletins on the question of cattle improvement and protection of live stock against contagious disease have been distributed, and a note on the results of preliminary experiments in sheep-breeding have been published.

A series of lectures and demonstrations in meat inspection was again this year delivered to the recently appointed health officers of the Sanitary department.

Owing to the difficulty in obtaining good shoeing smiths in these provinces the formation of a nalband's instruction class is under consideration.

TREATMENT OF DISEASE.

During the year there has been a decrease in the number of deaths reported from contagious disease, the mortality being 26,916 as compared with 33,860 of last year. Rinderpest as usual was responsible for 19,839 of the deaths recorded. At the same time more reports of outbreaks have been received and have been submitted with more system and regularity than in the past. Although these figures might at first appear to be somewhat high, it must be understood that with the increasing attention which is now given to this branch of the work and the greater facilities for ascertaining details and reporting outbreaks many more cases are now brought to our notice than was the case in past years, when it frequently happened during severe seasons that hundreds of outbreaks occurred without ever being reported. Now it is probable that approximately accurate estimates of the extent of contagious disease, with its attendant annual mortality, are being obtained.

Equine. Contagious diseases occurring in the four selected horse-breeding districts is dealt with by the Army Remount department, while the Army Veterinary Corps deals with the affected animals in the various branches of the Military department. The figures here only refer to cases brought directly under the notice of the C.V.D.

Glanders.—11 animals in 7 districts died or were destroyed. Surra.—21 equines died or were destroyed. This disease appeared less widespread than usual. Dourine and epizootic lymphangitis—no cases reported. Tetanus—many cases reported; 77 fatal: except cases brought to the veterinary assistants, difficulty is experienced in obtaining information. Strangles—10 cases reported, 1 fatal: here again it is believed that many more cases occur than are notified to this department. Cases of horse-pox, piropiasmiasis, influenza, anthrax, rabies, and diseases caused by internal and external parasites have been met with, but it has not been found practical to introduce a reliable system for obtaining returns.

Bovine. Rinderpest—some slight abatement. Inoculations were carried out in 41 districts, and in Jhansi and Garhwal alone 33,307 cattle were immunized.

Hæmorrhagic septicæmia—36 districts gave a mortality of 1765, against 2068 last year: a very satisfactory decrease on previous years. 516 were immunized by vaccine method, and 3228 inoculated with generally satisfactory results. Black quarter—again a satisfactory decrease in outbreaks and mortality. It appeared in 17 districts and 395 deaths only reported. In certain districts 400 animals were treated by vaccination, and this is probably responsible for the lowered death rate. Anthrax—Reported in 28 districts, against 32, destroyed 1585 head. It is doubtful if the reporting is reliable; it is often mistaken for other diseases. Foot-and-mouth—less prevalent than usual: 1824 reported mortality, chiefly in young stock, and old and decrepit animals. Other contagious diseases—165 head, including pleuro-pneumonia, bovine piroplasmiasis, tuberculosis, contagious abortion.

Other animals. Many deaths among sheep and goats from pleuro-pneumonia and rinderpest. Rabies, tetanus, hæmorrhagic septicæmia, fowl cholera, spirochetosis, surra, distemper, and various parasitic ailments, have accounted for many deaths among the smaller animals.

Protective inoculations, chiefly against rinderpest, have been carried out on a very large scale, and whenever possible this method of dealing with the disease is now adopted. Operations of this nature were undertaken in no less than 1,170 outbreaks against 573 in the previous year and 78,194 animals have been inoculated. A special effort to deal with a serious outbreak of rinderpest was made in the Gorakhpur district. Two inspectors and three veterinary assistants were lent from the provincial staff to supplement the district board men. The result was that 6440 animals were immunised and the outbreak promptly got in hand. In this district considerable opposition to inoculations had previously existed. Considering the widespread prevalence of disease and the enormous area of these provinces, it is obvious that but for inoculations very much heavier losses must have occurred. The satisfactory results attending this work are gradually overcoming the prejudices of the people, and in most districts very little opposition is now met with; in fact, during the year many applications were received from cattle owners in infected localities praying that inoculators may be sent to deal with their animals.

The veterinary assistants have visited 21,913 villages and have treated 39,011 animals for diseases other than those already reported on. In addition to this they have castrated 305 animals, and attended 40,339 cases of contagious diseases exclusive of those treated in hospitals and dispensaries.

Investigation of Disease.

During the past year the work at the headquarters laboratory has continued to increase very considerably and a great number of specimens of blood, morbid tissues, intestinal parasites and other material have been received from the district veterinary staff, veterinary inspectors, district officers, and private persons for examination and opinion. In these cases the results are noted and, where possible the diagnosis confirmed, and the persons interested accordingly informed. Investigations have been carried out in the slaughter-houses and the Burma dried meat factories of these provinces. A separate report on the subject is being submitted with proposals for putting the butchering trades under more efficient control.

The new research station for accommodation of animals under scientific observation has recently been completed, and was formally opened by His Honour the Lieutenant-Governor in November last. Already many interesting cases have been received. A number of

experiments have been carried on in connection with certain diseases, such as barsati, akrah, ardaha, dourine, pleuro-pneumonia of goats, fowl spirochetosis, malignant jaundice (piroplasmiasis).

Several animals suffering from "kamri" have been received for treatment and observation, and experiments have been carried out with a view of discovering the cause of the disease and a remedy for it. In some tracts considerable loss to horse owners annually results from the ravages of this malady, which up to the present appears to have defied efforts at curative treatment. The Superintendent, Civil Veterinary Department, would be glad of any cases for investigation if owners would inform him when an outbreak or even a single case occurs.

Veterinary hospitals and dispensaries.

There are now 61 hospitals or dispensaries in the provinces as against 49 of last year; twelve having been opened during the year. Others are about to be established at Kiarana, Allahabad, Phulpur, Karchana, Roorkee, Kasganj, Tilhar, Jalaun, Mohanlalganj, Malihabad, Bikapur, and the question of new premises for the present hospital in Moradabad is still under consideration.

It is satisfactory and encouraging to record that the total number of cases treated during the year at hospitals and dispensaries was: out-patients 62,040, and in-patients 5762, making a total of 67,802; an increase of 11,335 on last year's returns. Some districts have introduced the system of charging a small scale of fees to those owners who can afford to pay, whilst others are as yet averse to the procedure. It has now been adopted and is meeting with considerable success at Lucknow, Cawnpore, Agra, Dehra Dun and Jhansi, where it has been found to work well, and in some cases so much income is realised as to render the institution practically self-supporting, while other smaller dispensaries earn a not inconsiderable sum towards their expenses. The animals of all poor persons are treated gratis, and only those in a position to pay are charged. I think this system might be introduced at several other hospitals, as I do not anticipate that the levy of fees would in any way affect the attendance at the institutions.

BREEDING OPERATIONS.

One hundred and sixteen stud bulls are now maintained in 39 districts. The provision of adequate bull power appears to be giving considerable impetus to the cattle-breeding industry which year by year is arousing great interest in the province. The endeavours of the Civil Veterinary department have been directed towards the production of: (a) Improved working bullocks for ploughs, wells, and general agricultural purposes, as well as for heavy draught work; (b) A higher milk yielding class of cows.

The bull-rearing farm at Manjhra-Lakhimpur in the Kheri district continues to progress satisfactorily. It has been established four years, and since the first issue of bulls in 1912, 110 animals have been distributed. Fifty bulls will shortly be issued to certain herds in the Kheri and Pilibhit districts where they appear necessary. It is confidently believed that the proposed yearly introduction of an adequate number of sires into the herds will go a great way towards stimulating and maintaining the cattle-breeding industry of these parts, which from various causes appears to be declining.

In order to provide for the near future it was necessary on the establishment of the farm to buy well-bred and suitable male calves and rear them until mature enough for stud purposes. Brood cows, however, are now being gradually introduced into the farm with the object of ultimately breeding our own animals. Improvements and additions to the buildings are being made, the jungle is year by year becoming cleared and

the grass land is being considerably improved. There are at present 242 head of live stock on the farm.

Although some delay has been experienced in the erection of buildings for the Madkurikund Farm, Muttra, it has been already partly stocked with 169 animals. Nine bulls of the Kosi and Hissar breed have already been issued, and a further small batch of Hansi (Hissar), Kosi, Montgomery (Sahiwal), and Murrah buffalo bulls are ready for distribution.

It is proposed this year to import some British bulls, probably of the Ayrshire and Shorthorn breeds, in order to carry out experiments with a view to forming a strain which will give an increased milk yield. Originally some prejudice existed with regard to English crosses from the fact of having little or no immunity to the many Indian cattle epidemics, such as rinderpest, they quickly succumbed. Another objection was put forward that the male progeny would have little or no hump and would be useless for draught purposes. Although some mortality must be expected, preventive inoculation methods now in use considerably reduce the risk in this direction. It has also been found that the necessity for a fully developed hump for a bullock for draught purposes has been much exaggerated.

Equine (under local bodies).

At the commencement of the year there were 59 horse and pony stallions at stud belonging to this department. Eight stallions were purchased during the year. One was castrated and sold as it was considered unfit for further stud work, and two died—one from enteritis and the other from tetanus. One had to be destroyed, thus leaving a balance of 63 on the list at the end of the year.

Fifty-two sires were at stud work during the year, and the number of mares covered by them amounts to 2946, which is a very satisfactory number despite the fact that on account of the demand for horses as a result of the war, and increase in the mounted police, many mares have been disposed of in certain districts.

Regarding young stock, the progeny of these provincial stallions, there is a continued improvement and promise shown by them in many parts. Some excellent colts and fillies have been seen at the districts of Saharanpur, Moradabad, Budaun and Shahjahanpur.

The functions of this department are confined to the improvement of the indigenous horse and pony from a point of general utility, in those tracts other than the four selected districts. The past few years have witnessed a very considerable improvement in the quality of the animals bred in the unselected districts which fully justifies the comparatively small expenditure in this direction.

Donkey stallions.

At the beginning of the year there were 20 provincial donkeys on the register and two were since purchased from the Hissar cattle farm. Two have died, leaving 20. Of these, 16 were at stud and the number of mares covered by them amounted to 786, which shows an increase of 77 on last year's figures. There appears to be still an increasing demand for the services of donkey stallions for mule-breeding, but the limited number available renders it difficult to meet the demand.

Sheep-breeding.

The sheep-breeding experiments recently undertaken by this department with a view to improve the quality and quantity of the wool of the indigenous sheep have up to the present proved very encouraging and satisfactory. The introduction of the merino strain has been found to have a very beneficial effect on both the quality and quantity of the fleeces. A preliminary note on the subject giving the details and the results of these experiments has been separately submitted.

If a practical scheme can be evolved it is proposed to establish a sheep-breeding demonstration farm, where the public and those interested can see for themselves the results of intelligent and careful breeding and selection, as well as improved sheep management. The advantages of such methods as regular sheep dipping to prevent the ravages of various parasites are most important. This year an endeavour will be made to secure the services of an experienced and practical Australian shepherd well acquainted with the management of flocks, the methods of shearing and the handling of fleeces, who will be able to impart practical knowledge to the Indian breeders.

Fairs and shows. It is somewhat doubtful if the system of distributing money in the form of prizes for cattle at fairs and shows is productive of as much improvement in the local stock as would be expected. A scheme is being drawn up with a view to distributing prizes locally in those areas chiefly where Government stud bulls are located for the best stock got by them. It is hoped by this means to encourage the breeder to look ahead and breed up to a higher standard than he has formerly done.

Subordinate establishment.

The strength of the subordinate veterinary establishment as it stood on 31st March was as follows:—Veterinary inspectors 17, farm overseers, 2, veterinary assistants employed by district boards 129, veterinary assistants employed by municipalities 18, and provincial veterinary assistants (including one at Cawnpore agricultural farm) 11, in all 177 against 173 last year, making an increase of four only.

In view of the scheme for the new settlement of the financial arrangements of district boards, 30 of these bodies have this year sanctioned an increase in their subordinate veterinary staff and a demand for 52 extra veterinary assistants has arisen. Owing, however, to the enormous demand for the services of these men for the war, it is at present practically impossible to obtain anything like the number required, and for the same reason the provincial headquarters veterinary staff is now also 10 officers below its sanctioned strength.

It has been found that generally the work of the provincial veterinary inspectors is of a more efficient and thorough character than that done by the men employed by the district boards. For the reason that as they are directly under the control and supervision of the Superintendents, these provincial officers are subject to greater discipline and better training. It is obviously impossible for a district board to efficiently control officers carrying out work of a technical nature such as this, and their veterinary assistants now find no difficulty in evading certain duties which they would be unable to if placed more directly under the control and orders of the Superintendents of the Civil Veterinary department.

GENERAL REMARKS.

It is satisfactory to be able to report that in nearly every branch of the work of the Civil Veterinary Department very substantial progress has been made. I think we may claim that it is steadily increasing in efficiency, while the scope of its operations is rapidly extending. The chief object is to be of direct and practical use to the agricultural and stock-owning community, and it is gratifying to notice the growing confidence manifested by all classes in the work of the department.

The rapidly increasing work of the department has necessitated the addition of a third European officer as well as an extra Deputy Superintendent, which appointments will commence from October next.

My thanks are due to Mr. C. W. Wilson, second Superintendent, for the assistance he has rendered me

during the year in the control of the department and investigation of disease, and also to the Deputy Superintendent, M. Niaz Muhammad, who has performed his work in a satisfactory manner. Good work has been done by the office staff under the guidance of the head clerk, Babu Srish Chandra Bhattacharjya, and veterinary inspector S. Raza Husain is specially deserving of mention.

Care of Horses in Calcutta.

During spells of hot weather not a day passes without some poor animal going down as a result of heat apoplexy or sheer exhaustion, and it should be the aim of every horse-owner to counteract these conditions as far as possible. Some of the large horse-dealing firms in Calcutta make it a rule to keep properly equipped emergency staffs and conveyances for the purpose of affording speedy relief to any of their horses that are taken ill on the road. Messrs. Cook & Co. Ltd., who have six hundred horses hired out and in the streets daily, have introduced a system of looking after the animals during working hours. As a preventive measure, water-carts are sent round the streets in the commercial centre, and any horse belonging to them seen standing by the kerb is given a refreshing drink.

When a horse collapses a telephone message to the stables brings to the spot a special vehicle known as the "Ambulance Aid." This is a light-built four-wheeled waggon drawn by a fast pony. In congested traffic it is as speedy as a motor car. The shafts, wheels and body of the waggon are of bright red, and a Blue Cross is conspicuously shown on either side. A V.S. and several assistants are carried, and the equipment includes poles for raising a distressed horse from the ground, a plentiful supply of straw, a huge pillow for placing under the animal's head, a hose-pipe that can be connected to the nearest hydrant, blocks of ice, buckets, and a large canvas canopy to afford protection against the sun. Following the "Ambulance Aid" comes the ambulance proper, a large two-wheeled cart, open at both ends, containing a comfortable bed of straw, with a cool canopy overhead. In this the horse is conveyed back to the stables, placed under a *punkha*, and carefully tended.

When horses collapse through heat they are very often unfit for any further work until the cold season sets in. A "dry-coated" horse, that is, one which does not perspire even under great exertion, is peculiarly liable to heat apoplexy, and should be only lightly worked during the hot weather. Horses attached to private carriages are often given far too much work to do, more, in fact, than the *tikka gharry* horses, which, being country bred, are much better able to stand the climate than are the "Walers" (Australian horses). While the average working life in Calcutta of an imported horse averages from five to six years, the country-bred animal is generally on the streets for about ten years. Far less handsome in appearance than the Australian animal, his staying powers are far greater. The horses used for drawing office jauns come to Calcutta from Australia when they are between five and seven years old, and require about six months careful attention before they are of real use.

It is not unlikely that there will be a serious shortage of horses in Calcutta in the near future. Since the outbreak of the war the Government have exercised a monopoly over the supply of Australian horses, and private dealers will in all probability have to pay a much higher price for their animals when they commence to import again.—*The Statesman (Calcutta)*.

REVIEW.

ANÆSTHESIA AND NARCOSIS OF ANIMALS AND BIRDS. By FREDERICK T. G. HOBDAY, F.R.C.V.S., F.R.S.E. Demy 8vo. Pp. ix + 86. With 24 illustrations. Price 5/- net. (Baillière, Tindall, and Cox, 8 Henrietta Street, Covent Garden, London. 1915).

This small book does not demand a lengthy review. The subject with which it deals has expanded so enormously during the last twenty years that it is now scarcely possible to handle it satisfactorily in a work of this size; and it can scarcely be said that the author has made quite the best use of the scanty space he has allowed himself. Fully a quarter of the text is occupied by detailed and, in some cases, tabulated reports of clinical observations which have already been published, and the results of which might well have been summarised. The rest of the work consists of a brief and, for the most part, very elementary *résumé* of the various methods of anæsthesia and narcosis, with descriptions of apparatus for the former. Every method which is commonly used in this country is dealt with, together with some that are chiefly used abroad; but, though the author has condensed his information well, the space allotted to each subject is necessarily so small that the work really does not contain much that is not already well known to most practitioners.

Perhaps the most valuable sections are that on morphia-narcosis in the dog—which is fuller in its treatment than most portions of the work, and will, therefore, be useful to those who are still unfamiliar with the method—and the chapter on intra-spinal anæsthesia. The latter mainly consists of an abstract of Mennerat's thesis on the subject (which was presented at Paris some eighteen months ago), and gives the fullest account of the subject that we know of in the English language. There is one curious slip in translating—"the nerves of the cauda equina" are rendered "nerves of the tail of the horse"—but the chapter may be fully commended to all who are interested in intra-spinal anæsthesia. We note that the author considers that this method "is destined to render great service" in surgery—especially abdominal surgery—in the cat. It may do so in the hands of some operators; but, considering the difficulties of its technique, it hardly seems likely to come into very general use by practitioners.

Undoubtedly the book will be useful to students, and to some practitioners also. But it is impossible to lay it down without regretting that an author with such exceptional experience and knowledge of the subject has not dealt with it at greater length and with more detail.

W. R. C.

ARMY VETERINARY SERVICE.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Oct. 23.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temp. Qmr. with hon. rank of Lieut.:—R. H. Jameson. Dated Oct. 17.

To be temp. Lieut.:—C. Scott. Dated Aug. 24.

Temp. Lieuts. to be temp. Captains:—

W. Denington. Dated Aug. 27.

C. T. Bray. Dated Sept. 1.

T. M. Doyle. Dated Sept. 15.

A. Barr. Dated Oct. 8.

To be Temp. Lieut.:—J. W. Lazenby. Dated Oct. 14.

Oct. 27.
Temp. Lieut. to be temp. Capt.:—C. G. Hearn. Dated
Oct. 8.

Temp. Lieut. W. Atkinson relinquishes his commission.
Dated Oct. 1.

Oct. 28.
Temp. Lieut. to be temp. Capt.:—R. Isherwood. Dated
Aug. 31.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Oct. 26.
To be Capt.:—Lieut. A. Douglas. Dated June 20.

Oct. 27.
To be Capt.:—Lieut. H. E. Powell. Dated Oct. 18.

Oct. 28.
To be Lieut.:—J. W. Hopkin. Dated Oct. 29.

The following casualties in the Mediterranean Expeditionary Force are reported:—

DIED—Pte. C. Chandler, 2497.
Pte. V. W. Smith, 4492.

OBITUARY.

HUGH RAWSON SINGLETON, M.R.C.V.S., 7 Dorchester Road, Weymouth.

Graduated, Lond: July 1909.

Mr. Singleton died on Monday, Oct. 16, aged 47 years.

Sir Oswald Mosley and the Tuberculin Test.

The passing of Sir Oswald Mosley will be felt as a personal loss by thousands of agriculturists in England, for he was one of those "fine old gentlemen" of which a country is justly proud. He was, indeed, a remarkable personality, thoroughly British, both in appearance and character. His particular fancy in farming was the breeding of pedigree Shorthorns, in which he was very successful, and in connection with them he carried out, a few years ago, an experiment with results of great value to all cattle breeders. It is well known that tuberculosis had made very serious inroads amongst highly bred cattle, some of the worst affected at that time being the most valuable, and this it was that largely caused the collapse of the "pure Bates" strains. Naturally, to owners of animals whose price was reckoned by the thousand guineas it became a vital question as to whether the disease was hereditary, and as to this Sir Oswald decided to apply a crucial test. Having a number of cows in a breeding state, but shown to be tuberculous by reacting from the tuberculin test, he isolated them and removed their calves the instant they were born without allowing them to suck. These were weaned at an outlying farm, and not one of them developed the disease, at any rate before arriving at such an age as to demonstrate that they did not derive it from their parents. The sale of Sir Oswald's herd will probably not take place till next year.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab. (b)	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)			(a)	
Gr. BRITAIN.											
Week ended October 23	7	7	12	87		1	13	25		61	165
Corresponding week in											
1914 ...	16	16	2	16		4	†	†	3	73	757
1913 ...	7	9			3	15	23	29	4	43	428
1912 ...	9	9				3	19	29	3	37	762
Total for 43 weeks, 1915 ...	463	527	12	87	40	73	||679	||1458	165	3391	14740
Corresponding period in											
1914 ...	610	668	24	124	83	259	†1530	†2642	158	3583	34806
1913 ...	452	500			127	316	2078	4114	141	2048	26940
1912 ...	639	721	92	639	148	271	2480	5285	186	2479	32497

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.
Board of Agriculture and Fisheries, October 26, 1915

† Counties affected, animals attacked: York, W. Riding 1
|| Figures for thirty weeks only.

IRELAND.	Week ended Oct. 23	Outbreaks						7	7	21
				
Corresponding Week in	1914 ...	...	...	...	...	...	1	4	2	9
	1913 ...	...	...	...	...	...	1	10	2	8
	1912 ...	...	...	23	67	...	2	2	1	41
Total for 43 weeks, 1915	...	1	1	...	...	1	3	62	340	216
Corresponding period in	1914 ...	1	1	76	957	...	70	429	172	867
	1913 ...	...	...	...	...	...	109	423	126	777
	1912 ...	3	3	65	356	...	57	285	194	1581

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Oct. 25, 1915
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

The Military Remount Training Stables.

This establishment at Melton Mowbray is officially known as above, but it has been more appropriately termed the "war horse's reformatory."

"Bucker," "Dangerous," "Unmanageable," "Kicker," "Striker," are some of the descriptions nailed up on white cards on the stalls of the horses stabled here. They have come to be cured, reformed—or "converted," as one of the Irish rough-riders of the establishment puts it. "Faith, sorr, it's the divvel that's in him, and it's us, sorr, that 'exercise' him."

Colonel Jones, a former Indian officer, who has ridden horses, trained horses, bred horses, and "written" horses almost all his years, is in charge of this horse reformatory. With him is Captain S. G. Sanders, former riding master of the 4th Dragoon Guards, who loves to take the very worst cases that come into the school for treatment. There are also four sergeants, all excellent horsemen, and a little group of seven civilian rough-riders whose ambition seems to be to "get across" the wildest thing on legs and stick there. A sense of the real danger of their work seems to be missing. When the Irish rider mentioned spread-eagled through the air, his only comment was, "Sure, it's an angel I've been for a little while."

That the training at this reformatory is effective is illustrated by the following summary of what has happened to 324 horses, all sent to the reformatory from the army this year as unmanageable and beyond hope:—Still in training, 35; in sick lines, 7; sold, 6; died, 3; shot, 8; sent back to army cured, 246; ready to send back, 19.

VETERINARY STUDENTS & MILITARY SERVICE.

Dear Sir,

What is expected of veterinary students with regard to military service? I have a son at the Camden Town College, who together with about fifty others joined the University of London Officers' Training Corps last December. They paid an entrance fee of three guineas each, and attended drills and lectures with a view to entering an artillery unit. About the end of August or beginning of September last, my son, and I believe the rest of them, were asked to send in their uniform and equipment as their training would not be proceeded with. Not satisfied with this my boy went purposely to London to try to enrol in the Inns of Court O.T.C. As soon as it was known he had been in the University of London O.T.C. without getting a commission, he was told they could do nothing for him. I am sure it could be for no personal reason, as he is eligible in every way. Is it that it is considered on account of the present shortage of veterinary surgeons they may best serve the country by qualifying as soon as possible? I understand only about a dozen freshmen entered the College at the beginning of this term, this no doubt being partly due to some who would otherwise have entered having joined His Majesty's Forces. But I believe the shrinkage has been progressive for some time. I remember when I entered the College about thirty years ago sixty-nine joined at that time. I think in view of the present recruiting efforts the position of veterinary students is most unsatisfactory. If the authorities think, as in the case of medical students, they should not be enrolled, it would be much better if they would say so, as I am sure all the students are quite willing to do whatever is thought best in the present crisis.—Yours truly,

PERPLEXED PARENT.

[Our correspondent will find a sufficient reply in the report of The Special Meeting of Council (p. 192) under the heading of War Emergency.]

Veterinary Societies—Addresses.

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Meetings, Second Friday of Feb., June, and October

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COLONIAL SOCIETIES (continued next page)

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56 Bridge Street, Sydney

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Meetings, First Tuesday, March and September

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Meetings, Second Wednesday, May, Oct. and January.

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THE VETERINARY RECORD

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James M'Call, F.R.C.V.S.

Old students of the Glasgow College will naturally regret Principal M'Call more keenly than others; but the whole profession will feel poorer by his death. His has been an honoured name throughout the professional memories of most of us; for there are now not many men upon the Register who can remember the days before Principal M'Call founded the Glasgow School. No man now living has occupied so prominent a position amongst us for so long a period as he; and his death is truly the severance of a link with the far past. More than that, it is a present loss; for, unlike many men who attain such an age as he, Principal M'Call remained in active service throughout his long life. The oldest of our present members of Council, and by far the oldest of our teachers, he was recognised to the end as one of the soundest clinicians in Scotland, and his place as a consultant will be difficult to fill. Last—and best—he was a man whose personal character and conduct brought nothing but credit to the profession, and who set a worthy example for his students to follow. Many of those students who themselves have gained good repute in their districts will acknowledge that they have done so through following the lead of their old Glasgow Principal.

"FOUL IN THE FOOT."

Recently we cited canine "inter-digital abscess" as one of many conditions which have not yet received the attention they deserve from essayists. Bovine "foul in the foot" is another. It is a quite common and often very troublesome disease in many practices; but little has been written upon it in either text-books or journals. Its etiology is still vague; and perhaps a sufficiently comprehensive pathological research would show that the term "foul" is used to include a variety of conditions which differ more widely than their clinical appearances would suggest. Its treatment is often unsatisfactory, probably largely because the practitioner is but seldom called to a case until it has become really serious.

Further, it can scarcely be said that our present methods of treating it show any great advance upon or variation from those in vogue a generation ago. Decidedly it is a disease concerning which comparison of notes between practitioners is needed; and Mr. T. C. Fletcher chose wisely in selecting it to bring before the North Midland V.M.A. The subject interested the audience; and similarly it will interest a good number of the profession. It would be well if more essayists would appreciate the value of the "everyday practical subject" that is not hackneyed.

STRANGLES OUTBREAKS.

In reference to Captain Lishman's article published in *The Veterinary Record* of 9th October, I would like to relate to him an unfortunate experience which happened to me, which ought to prove beyond any shadow of a doubt that catarrh and strangles are one and the same disease.

Nearly three years ago, when stationed at Windsor, my charger got affected with what I at first thought was catarrh. He was never ill or off his feed, and only had a slight temperature for one day. The discharge continued on for a month, but there was no swelling in the throat, and no abscess in the glands in the intermaxillary space.

As I was going home on leave and wanted to hunt my horse, and as the discharge was less, I took him home. He was put into the stable at my home, and within a fortnight had given strangles to the two horses which were in the stable, and also a two-year-old which was in a field 200 yards away caught the disease, the infection being carried, no doubt, through the corn, hay, sieve or bucket, which were kept in the stable.

All the three new cases had (using Captain Lishman's expression), "a complete attack of strangles with big abscesses in the inter-maxillary space. I might add that my horse became a whistler after his attack.

What is badly wanted is a reliable vaccine to prevent horses getting strangles, as the after effects of strangles are most disastrous.

GRAHAM REES-MOGG, F.R.C.V.S.

Codford, 2nd November.

A QUESTION OF DIETETICS.

The following may be interesting, if not instructive.

A yardman in the employ of a large corn company divided about half a bushel of "Runner bean seed" into the mangers of six horses; and about an hour or an hour-and-a-half afterwards three out of the six were taken with colicky pains. The pulses were in the neighbourhood of 72, and the respirations were slightly stertorous about 15. They evinced a desire to lie down and refused food of any description. This occurred at night. During the next two days, two out of the three refused food, the temperature rising to 103, the pulse remaining at 72. They have fed a little to-night and there has been no recurrence of pain since the first six hours, except in once case, which lasted, on and off, till the next evening.

It is explained that, by some means or other, (I believe three came in earlier than the others, and thus got more of the beans), that the three which were affected had the most beans.

I have wondered whether there can be any alkaloid or narcotic which could have caused the trouble.

They appear to be recovering, but are still under observation.

W. W.

ABSTRACTS FROM FOREIGN JOURNALS.

VACCINATION AGAINST GLANDERS.

In Germany, during the present war, the cases of glanders amongst army horses have risen to excess, and probably they will continue to augment. Serious damage to civilian owners, whose stables have become most gravely infected in certain cases, has resulted. These facts have led to renewed attention being paid to the question of immunising horses against glanders.

Until a short time ago, immunization against glanders did not appear to be possible. The earlier experiments upon the subject, though extensive, did not give satisfactory results. But in assessing these first experiments it is especially necessary to allow for the fact that the animals experimented upon, after being vaccinated, were inoculated with virulent bacilli—that is to say, they were exposed after vaccination to a contagion much more serious than that which occurs in practice. There is always a certain quantitative relation between infection and immunity; and an artificial immunisation insufficient to protect against an abundant and serious contagion may nevertheless certainly suffice against an infection of moderate severity.

Pfeiler has studied the effect of vaccination with killed bacilli upon a not inconsiderable number of both healthy and glandered horses. About 90% to 95% of the glandered horses became worse after the vaccinations, dying within the term of twelve hours. This certainly proceeded from a kind of hypersensibility through which the morbid condition became much more distinct and serious. The healthy horses, on the other hand, suffered no inconvenience from the vaccination. As a matter of precaution, they were given two days rest after vaccination, and could then be returned. The active immunisation against glanders, therefore, deserves to be practised upon a large scale. The price of the vaccine is not serious, considering the importance of the problem and the great losses caused by glanders. Considerable experiments in this direction are already in progress in Germany; but their result is not yet known. Pfeiler suggests vaccinating the horses in certain regiments of cavalry before sending them to the Russian front, which is known to be severely infected. In this manner the animals would certainly be exposed to infection; and it would be unnecessary to leave horses unvaccinated as controls in the selected regiments. A comparison between the cases of glanders in the vaccinated and unvaccinated regiments

respectively would afford good evidence as to the value of vaccination.

A few experiments have also been made upon the influence of vaccination upon the reactions of various diagnostic tests of glanders. These show that healthy vaccinated horses react positively to the agglutination and complement-fixation tests, but do not react to the ophthalmic mallein test. In this respect they behave like cattle immunised against tuberculosis; and very probably they would not react to the other local mallein tests.—(*La Clinica Veterinaria*).

PATHOLOGICAL INVESTIGATION IN LAMZIEKTE.

Hedinger deals with this subject in a report to the Minister of Agriculture (published by the Government Printing and Stationery Office, Pretoria).

After dealing at some length with the previously published records regarding the disease the author passes to a short description of each of 52 cases examined. Summarising the lesions found in these he finds that special importance attaches to the presence of degenerative lesions and inflammatory changes in the muscles and nerves respectively.

The author then deals with the theories that have been put forward at different times to explain the symptoms and lesions of the disease. He finds that these—the infection, the poisonous plant, the want of nutrition, and the accumulative vegetable poison theories—are all unsatisfactory.

The general opinion arrived at is that the disease is in some way connected with the presence of sarcosporidia in the muscles, although these parasites may be found in the muscular tissues of animals that are not affected.

The last paragraph but one in the author's report is as follows:—

"Lamziekte is a disease which is very well characterised by histological changes of the cross-striated muscles, and in most cases of the nervous system, and by the presence of sarcosporidia. Although, owing to the incomplete knowledge of the sarcosporidia, it is still not possible to prove experimentally the importance of the sarcosporidiosis for the lamziekte, it is quite possible, taking into consideration the facts that are known about sarcosporidia, that these protozoa are the cause of lamziekte. The sarcosporidiosis explains without difficulty the whole nature of lamziekte. Be it that the sarcosporidia are or are not responsible for lamziekte, in all further investigations the question of the importance of sarcosporidia must have the first place."—(*Tropical Vet. Bulletin*).

THE PASSAGE OF TRYPANOSOMES INTO MILK.

A. Lanfranchi has carried out a small number of experiments with *T. brucei*, *T. evansi*, *T. rhodesiense*, and *T. gambiense* with the object of ascertaining whether new-born animals can contract infection through the medium of the milk, whether trypanosomes can be demonstrated by direct examination of the milk, and whether the infectivity of the milk can be demonstrated by intra-peritoneal inoculation of rats and mice. He records his results (*Bull. Soc. Path. Exot.*, 1915, July, Vol. 8, No. 7, pp. 438-442).

In the first experiment, in which a pomeranian bitch was inoculated with *T. brucei* some hours after whelping, two of the pups died on the twelfth day, and although examination of their blood was negative, it was proved to be infective by the inoculation of rats. Similarly, microscopic examination of the milk was constantly negative, but it was found to contain trypanosomes by inoculation.

In another experiment a bitch was inoculated intravenously with blood containing *T. rhodesiense*. None of the puppies born the day prior to inoculation became infected, and trypanosomes could not be discovered in the milk by microscopic examination. One mouse out of several inoculated with milk on different days became infected.

In a similar experiment carried out with the virus of surra entirely negative results were obtained.

In the last experiment, which was carried out with *T. gambiense*, the blood and extracts of the organs of three out of seven puppies proved infective for mice. Microscopic examination of the milk was negative, but one mouse inoculated with it became infected.

Every care was taken to exclude the possibility of the puppies becoming infected by blood from small wounds on the teats.—(*Trop. Vet. Bulletin*).

W. R. C.

NORTH MIDLAND VETERINARY MEDICAL ASSOCIATION.

[NATIONAL V.M.A.—NORTHERN BRANCH.]

The Quarterly Meeting of the above Association was held at the Grand Hotel, Sheffield, on Tuesday, October 19th. The following members were present:—Messrs. Robinson (President), J. S. Lloyd (Hon. Sec.), T. Bowett, W. Collinson, T. C. Fletcher, G. J. Furness, R. Hudson, W. Murgatroyd, S. H. Nixon, S. E. Sampson, C. Secker Smith, F. L. Somerset, and H. Thompson (Hon. Treas.).

The minutes of the last quarterly meeting were confirmed on the proposition of Mr. T. C. Fletcher, seconded by Mr. C. Secker Smith.

The report of the Council meeting held on September 28th, was adopted on the proposition of Mr. T. C. Fletcher, seconded by Mr. C. Secker Smith.

The Hon. Sec. reported on apologies for inability to be present had been received from Mr. E. Marrison and Mr. G. Howe.

The Hon. Sec. also reported on conversations and correspondence he had had with Mr. J. H. Yates, who has accepted a commission in the Army Veterinary Corps. The matter was left over for discussion later.

The President referred to a letter from Mr. Bullock, the Secretary of the Royal College, with regard to a proposed Fund for the benefit of French and Belgian veterinary surgeons who have lost all through the war, and reported that a meeting was to be held in London on Friday, October 22nd.

It was decided to discuss the matter at the next meeting, when a report has been received as to the proceedings at the meeting in London.

The Hon. Treasurer (Mr. H. Thompson) presented the financial statement, which showed the Association to have a balance in hand of £25 2s. 2d. He reported that subscriptions amounting to £9 were still unpaid, but said that a number of the defaulters are serving with H.M. Forces.

The Hon. Sec. said that according to rule 9 members who are two years in arrear with their subscriptions cease to be members of the Association. He said, "I think there is a way out of this difficulty. We do not wish to lose any of our members. I think it would be a nice thing for us to elect every man who has joined H.M. Forces a honorary member during the time that he is away. They are getting no advantage from the Association whilst they are away, and I do not think it will make much difference to us financially. I suggest that the matter be referred to the Council to consider at their next meeting."

Mr. G. J. FURNESS gave notice that he would move at the annual meeting, "That the members of the Association engaged with H.M. Forces be excused their subscriptions for the time that they are away."

ELECTION OF OFFICERS.

The President: I have pleasure in moving that Mr. T. C. FLETCHER be the President for the ensuing year. I am sure he will add lustre to the chair.

Mr. C. SECKER SMITH: I have great pleasure in seconding the proposition. I am sure it is quite time we should confer the honour on a Sheffield gentleman. As most of you are aware we wished to do this at the first meeting of the Association, but the objection was that seeing the Association was formed in Sheffield we did not wish veterinary surgeons to get the idea that the Association was being run by Sheffield members. I am sure that in Mr. Fletcher we have made a very good choice, and I hope he will have good health and a good year of office. I know he will give satisfaction to every member of the Association.

The resolution was carried unanimously with acclamation.

Mr. T. C. FLETCHER: Mr. President and gentlemen, I am greatly obliged to you all for putting me in the place of President for the coming year. It is not a position that I sought. I think that during the trying times we are going through the position is not one to be sought after. We have decided to carry on the North Midland meetings during the coming year, and if my services can be of any avail to you I am glad to put them at your disposal. The idea of a Presidential address rather worries me, but I can make it as short as I like and as sweet as I like. I thank you very much for the honour you have done me to-night.

Vice-Presidents. Messrs. S. E. SAMPSON and W. COLLINSON were proposed by Mr. Lloyd, and seconded by Mr. Somerset. These gentlemen were duly elected.

Mr. COLLINSON: Mr. President and gentlemen, I thank you very much for the honour you have done Mr. Sampson and myself in electing us Vice-Presidents of this Association.

Auditors. Messrs. T. BOWETT and A. D. MORGAN were elected on the proposition of the President, seconded by Mr. Fletcher.

Council. Messrs. FURNESS, HUDSON, NIXON, SMITH, SOMERSET, and MURGATROYD were elected, on the proposition of Mr. T. C. Fletcher, seconded by Mr. W. Collinson.

Hon. Treasurer. Mr. H. THOMPSON was re-elected on the proposition of the President, seconded by Mr. Somerset.

Hon. Secretary. Mr. J. S. LLOYD was re-elected on the proposition of the President, seconded by Mr. T. C. Fletcher.

UNDIAGNOSED.

Mr. T. C. FLETCHER referred to a horse which he had had brought near to the hotel, and which had been been inspected by the members of the Association. He said: This animal commenced with a small pustule on the outside of the fetlock perhaps some 12 months ago,

No particular attention was drawn to it, and the animal has always been kept hard at work. Latterly the number of pustules has been increasing, and although you do not get many at once, perhaps two or three times a week you are having the formation of these small pustules and the discharge of a little matter. The case presents some difficulties to me because of the formation of so much fibrous tissue, and I can see that the fibrous tissue is increasing rather rapidly. This horse had very bad forefeet, and I sent him out to a farm for three months' grass treatment, with a little work, practically to get him off hard corn, such as they feed horses on in brewery stables. I have seen him to-day for the second time since he came back eight days ago, and I find that the fibrous tissue is still increasing. I had some of the contents of one of these small pustules collected, and sent it on to Mr. Morgan.

He reports as follows: "I made two smears—stained with methylene blue. The most noticeable organism present is a large diplococcus (which I cannot give a name to). Staphylococci are not present either in their typical grouping or in the 'Sarcina' or 'Zooglea' forms adopted by the *Micrococcus aschoffmanni*—the organism responsible for Bothryomycosis."

I had an idea that this was a case of Bothryomycosis because I had been reading up the treatment of Bothryomycosis, and I thought of putting the animal on Pot. iod. After your notice of the case I should like your opinion as to how I can treat it. I have treated it for some time purely as a skin affection. I have dressed it with mange dressings and also with grease dressing. I have tried Iodine painted on. Not one stopped the small pustules, neither did they decrease the fibrous tissue. If anyone can give me an idea of what they would do I shall be very gratified, and can promise you that I shall fulfil your behests to the best of my ability.

Mr. F. L. SOMERSET: It appears from Mr. Fletcher's statement that he formed the opinion that this trouble was probably constitutional in its origin; otherwise he would not have had the horse taken off corn and put on grass treatment. I think it is rather important to know whether he saw the animal when the lesion first developed, and if not, what length of time elapsed between the formation of the lesion and the time when he saw it. From the formation of the large amount of fibrous tissue which appears to have taken place in this case I should have come to the conclusion that the injury, instead of being of skin origin, was of deeper origin. The irritation being of a sub-acute nature points to rather more deep-seated injury than that of the skin alone. I do not think there would have been that amount of fibrous tissue formed if the injury had been to the skin. As to the pustules forming, I am inclined to think, with Mr. Fletcher, that the trouble is not "grease." The microscopic examination and the report from Mr. Morgan do not seem to help very much.

I have seen one or two cases of Bothryomycosis, usually in the genitals in horses, and I have generally found that there were very deep-seated sinuses in connection with that disease. This case is not to my mind typical of that disease. I should be inclined to think that it is due, in the first place, to an injury or a punctured wound causing a deep-seated injury of a sub-acute nature. As far as the treatment is concerned, I think I should have adopted severe measures. I should have gone in for blistering, and I do not think it would have done any harm to use Pot. iod. inwardly.

Mr. G. J. FURNESS referred to a similar case in his practice.

Mr. R. HUDSON: Some time ago I had a case which broke out, and showed symptoms similar to those in the case under discussion. I adopted deep-seated firing and gave an Iodine blister, and, to my surprise, the first formation was checked and subsided, and though one place ran for some time afterwards it eventually healed

up. I think the formation of tissue is due to the presence of some germ such as Mr. Morgan mentions. I think deep-seated firing and blistering is the best treatment in a case of this kind.

Mr. J. S. LLOYD: It would probably be helpful if Mr. Fletcher could collect some more pus from the case in order to send it to the Pathological Department of the University, and get them to make a few cultures.

Mr. T. C. FLETCHER: I must thank you, gentlemen, for your opinions and for looking at the case. To my mind it is purely a skin affection. I think we will leave it there, and I will attend myself when there is a pustule forming, and collect material for sending to the University, and report results to you at a future meeting.

Mr. S. H. NIXON referred to a similar condition in a horse which had a big fibrous swelling, and which had yielded to his treatment.

FOUL IN THE FEET OF CATTLE.

C. T. FLETCHER, M.R.C.V.S., Sheffield.

Mr. President and Gentlemen—In introducing to your notice, under the title of "Foul in the feet of Cows," a disease that is of little interest to a great many practitioners, I was perhaps selfish enough not to consider them but to consider myself, for whom the disease and its results have great interest.

It is only in the dairying districts and the farms surrounding large towns, where the means of livelihood of the farmer depend largely upon the keeping of milch cows, that the full effects of "foul" are particularly noted. It is not a disease that has attracted much attention from any of our cattle pathologists, and so I have been unable to read up and impart to you the opinions of others on the subject, and must ask you to take mine for what they are worth. Foul should be divided under three heads: (1) Simple, without suppuration; (2) Suppuration or stinking foul; and (3) Bone foul.

The simple form does not call for much consideration from the veterinary practitioner. It consists only of a mild inflammatory condition of the portion of cow's foot either at the heel, or the skin at the top of the division between the claws or phalanges. The lameness is not excessive, and the farmer usually does not call in any professional advice, but prefers to treat it himself by poulticing and the application of some of the many nostrums sold to him at some of the agricultural shows he has attended. I have for years made up a "Foul" liniment to induce the cow owner to keep by him for this simple form of the disease—something he can "rub on"—knowing well that if he hasn't any of my liniment by him, he will use that prepared by someone else. In a few days the inflammatory condition subsides, and there may possibly be signs of pus formation. If so, it is not extensive, and shows as a slight crack above the ungual phalangeal space, or, as I shall prefer to call it, the interdigital space.

Suppurative foul, commonly called by the owner of the cow "stinking foul," is a form of the disease to which our attention is usually called. When we arrive, we find that the disease has existed a few days or a week. There is intense inflammation of the surrounding tissues of the foot, the distance between the claws has widened, there is a stinking discharge from between them, which has extended to the skin above both in front and at the heel, and, in the worst cases, a separation becomes apparent between the coronet and the horn, with signs of discharge. The pain is very great, and the animal is disinclined to rise: her appetite has fallen off and her milk supply has diminished.

Examination having revealed the above conditions, take stock of the animal, remembering that a hind foot is more difficult to treat than a fore one. If the cow is in fairly good meat condition, is not in calf, and has

gone nearly dry, then I think you are justified in ordering her slaughter for human consumption. In some districts, I know this is not such an easy matter, as the governing powers look upon any animal that cannot walk to a slaughterhouse as unfit for human food. In my opinion, they err on the over-cautious side; it is as great a sin to waste a good body of beef as to waste so much flour.

Treatment having been decided upon, the foot should be well cleansed with one of the many antiseptic fluids. If the cow can be caught in the recumbent position, get a man to "nose" her with his fingers or a pair of bulldogs, and bend her head well back towards her loins, which will prevent her rising. Take a sharp scalpel and cut deeply between the claws, extending the incision up to the coronet and going right through the semi-horny integument that exists there. There will be a fair amount of bleeding, but no application should be made to stop it. A piece of tow should be pulled out, anointed with some form of digestive ointment and drawn once or twice up and down the cut and then fastened on with a bandage secured by strings at both ends, or by strings at one end and a couple of eyelet holes at the other. The digestive ointment that I most favour is made up of lard, Venice turpentine and sulphuric acid. This treatment should be renewed by the persons in charge once or twice a day, and you may confine yourself to an occasional attendance to remove the necrosed portion or slough of tissue as it appears. If you can get a good suppurative discharge from between the claws, you invariably stop the flowing of pus under the horn, which, when it does occur, lengthens the time of treatment, as a good deal of horn paring has to be done to evacuate the imprisoned pus. A form of treatment which is occasionally adopted by the farmer himself is the drawing of a rope backwards and forwards between the claws for five or ten minutes, presumably to cleanse and also to wear through the part that I recommend should be deeply excised.

Granulation between the claws retards recovery very considerably, and I usually find it necessary to dress with alum ustum. I do not recommend the use of strong acids, as the cow is an uncertain animal about her feet, and you are just as likely to get some of the acid as she is.

Much diversity of opinion exists as to the employment of poultices in the treatment of foul, just as in the medical profession in certain suppurative diseases. For my own part, I think their application is justified. They have a soothing action on the inflamed foot that nothing else has, and, although they may increase the formation of pus, that to my mind is not detrimental. I never knew of poulticing producing pus where there were not already pus-producing organisms.

We will now suppose that resolution is taking place in the different parts that have been affected, and to help this, I recommend a piece of cloth being wrapped in the form of a swab round the foot and the application several times daily of mild Hyd. perchlor. solution.

I should like to draw your attention to an article in *The Record* of August 21st on Hypochlorous Acid and its application to wounds, as I think foul is one of the diseases in which benefit may arise from its use. In my next case, I intend to give it a trial, not in the form of gas, but as a solution.

I will now deal with the disease commonly known as Bone Foul. This form, to my mind, is identical with that disease in the horse which the late William Hunting, in a paper read before the National Veterinary Association in 1912, named Phalangeal Ostitis. He said, "By Ostitis I mean inflammation of bone as disclosed by pain and lameness, accompanied sooner or later by exostosis or by destructive changes such as softening, hardening, and necrosis. By phalangeal, I mean all bones below the fetlock." He then goes on to enumerate

the different forms of ostitis as affecting the horse, such as navicular disease, suffraginitis, ringbone, all of which are well known to you, with their more or less extensive exostosis.

Bone foul, I contend, should be named Phalangeal Ostitis of the Cow. The first symptom of the disease is slight lameness with swelling, with the characteristic widening of the claws, but not much constitutional disturbance. In a few days, or sometimes in a few hours, the inflammatory conditions increase rapidly; there is intense pain, and the swelling extends up the limb, the cow refuses food, her milk supply has gone, she adopts the recumbent position almost continuously, and generally seems in a bad way. Should the condition of the animal warrant her being slaughtered, I never hesitate to recommend it to the owner, as I know from experience that by the time you have done with her, the owner is in possession of the frame of a cow and a pretty heavy bill.

Is it possible, when first called in, to distinguish between Phalangeal Ostitis and Suppurative Foul? I distinctly say "no," therefore, I often adopt the plan of trying treatment for a few days before disposing of the animal, and centre my efforts to endeavour to make the case one of Suppurative Foul, because I consider that of the two forms of the disease it is the least serious. I cut deeply between the claws and apply the digestive ointment as in the former treatment, and poultice with linseed. Should I get no suppurative response to this effort, I know that I have got a case of Ostitis.

Now, in determining the treatment of Ostitis, it is well to remember that all inflammations of bone below the fetlock commence in the bone, and that the lesions we commonly find on the surface are secondary to the continuance and spread of the inflammation from within. (Specimen exhibited.) The result of the treatment of this form of disease in my hands has always been unsatisfactory. I have tried stimulating embrocations, I have tried Hydr. biniod ointment, Belladonna liniment, cooling lotions, but all to no purpose; and I now adopt the old-fashioned treatment of modifying the pain as much as possible by continuous applications of linseed poultices, the administration of laxative medicines, and a bottle of something to rub on (for the benefit of the day-book). The causes of the disease are still an open field for investigation, and I find that most members of the profession have their own pet theory—until a case comes along which upsets it. For myself, I venture the opinion that it is due to dietary mismanagement, and the desire of the owner of the animal to turn her into a milking machine.

I fear that for one night you will have heard enough of this foul disease. When I promised the Secretary to help to fill in a night of a meeting, I intended some verbal observations and not a paper, but on the agenda of this meeting I noted that he had put me down to read a paper, so the infliction I have subjected you to and the extra labour he has put upon me will some day rebound upon him to his great discomfort.

Mr. J. S. LLOYD: I have brought two feet with me, and I thought possibly it might help the discussion if I showed my way of dressing feet for foul. I am inclined to go further than Mr. Fletcher with regard to the foot which he has exhibited. We all know that in the coronet there are a lot of tissues, and I think that when we get a bad case of foul all these tissues are involved in addition to the bone. I think that when ankylosis takes place possibly the pain diminishes.

There is a point in relation to foul which Mr. Fletcher has not touched upon. Foul in the feet of cattle has been known to be tuberculous. I am not going to say that I have seen a case of tubercular foul, but there is just a chance that the "bone foul" is tubercular in its origin.

(The members then adjourned for tea at the invitation of the President).

Upon re-assembling, the PRESIDENT said: Gentlemen, we have all listened with great pleasure to Mr. Fletcher's paper. I was sorry that he did not go into the cause of foul. My experience is that we have two sorts of foul. I have had eight or nine cases in the same cow-house at the same time. No doubt they all had one common cause. I certainly should not believe in cutting every case I went to. In my experience many cases of "bone foul" are tubercular, and if you make a post-mortem of the animal you will probably find that the animal has been subject to tuberculosis. My experience in the treatment of these cases is that the farmer, when he has treated the cases himself, has had the dressing too strong. I try to keep the place clean, give a purgative, and use a mild antiseptic. I hope you will all join in the discussion.

Mr. W. COLLINSON: I must thank Mr. Fletcher for his very able paper. I may say that I get a fair amount of foul in my district, and I have a similar method of treatment to Mr. Fletcher, although I do not use quite the same bandage. I use an ordinary figure 8 and put sacking over it. I very seldom use a knife. I find that if you get called fairly early an ordinary antiseptic poultice and an ointment made of powdered resin which I impregnate with pure carbolic and let down with vaseline, does well. I dress in the same way as Mr. Fletcher, and put a figure 8 bandage round the dressing.

Mr. Fletcher has not said anything about foul being infectious. I had a case of a calf about eight to ten months old, which was bought and turned into a pasture with three other calves about the same age, and this calf developed foul in the foot two or three days after the man got it home. Within a fortnight all four of the calves were affected. The paddock they were in would not be above half an acre. In this case the man had poulticed and dressed it with sulphate of copper. The claws were very widely spread, and for the first dressing I used ordinary ointment. I was in the neighbourhood about a couple of days after, and I took some "Eupad" with me, but instead of making a lotion of it I simply dabbed a good lot in between the claws, got a bit of tow and put the powder on that, and put it up into the claws. I then bandaged them up, and to-day—three weeks after—I was at the place, and the owner says the calves have gone on very well indeed, and he has turned them out again. I left him a bottle of the lotion and instructed him how to dress the feet. I do not find that you get any caustic effect from this dressing at all. I take it that in Mr. Lloyd's cases there was not the amount of inflammation and spread of the claws that we get in some cases. If there had been I do not think one dressing would have been sufficient. If you get milking beasts affected we all know that they go off milk very quickly. I think a good tonic helps in the treatment of the case. I should like to hear someone else's opinion as to foul being infectious. I have seen cases in ordinary cowsheds where there has been one case and the other animals in the same cowshed have not been affected. In the cases I have referred to the animals were out at pasture.

Mr. R. HUDSON: I should like to mention a peculiar case of foot trouble which might have developed perhaps into a case of foul. The subject was a fat cow. She suddenly developed a great amount of pain in one forefoot and could scarcely stand. There was no swelling about the upper part of the foot, and all I could find was a little cavity just at the bend of the bone containing grey matter, just at the toe of one claw. There was just one little speck of grey matter about the size of a pea. I pared away the horn and could not find any trace of there having been any penetration. Simple cases of foul no doubt frequently originate from food. We have rich fields in our district which have a ten-

dency to produce foul. It has always been a problem to me where the trouble in foul originates. Whether it is a lymphatic trouble and may be of germ origin I do not know, but it always appears to me that it is of a lymphatic nature. Some of our cases of foul appear to me to be due to minute punctures of the inter-digital membrane. Some appear to form abscesses much more rapidly than others, whereas some subside with very little treatment.

Mr. S. E. SAMPSON: I am sorry I was not present to hear Mr. Fletcher's remarks on foul, and I dare say it has been my loss. With regard to the remarks of Mr. Lloyd—I used to come across some of these cases when I was a boy at home, but since I have obtained the Diploma my cases have not been so simple as those he cites. The cases I have come across are those where the owners may be said to have a pre-historic knowledge of foul—those cases where there is inter-digital swelling and also bursting on the inside of the coronet—cases which require a good deal of skill in treating, and skill in persuading the owner to keep quiet till they are better. The treatment I have found most successful generally is to adopt a strong antiseptic solution, with bathing—not poulticing. I have a case on just now where there is nothing to see but two holes on the sides of the coronet, and I can syringe right through from the outside. To my mind, in a case of this nature you have infection of some kind. With the ordinary case of foul it has always struck me that we have some of the necrotic organisms that we are always coming across. Whether it is due to infection I should like to know, because in some cases we get what is known as a "foul farm," or a "foul field." I have one particular farm in my district where cattle were always being infected with foul, and for the last two years I have not had a single case. I, personally, do not think that these cases will do with one dressing: thoroughness in dressing a case of foul, to my mind, is the crux of the whole question.

Mr. G. J. FURNESS: I do not think, Mr. President, I can add much to what has been. I agree almost entirely with Mr. Sampson that the "one visit cases" have usually gone by before we are called in. The treatment I have adopted is a strong antiseptic and poultices until the slough separates. In some cases the condition has been so bad that I have found it necessary to amputate one half of the foot. I have four cases in mind now; three of them have gone on all right, but the fourth had to be slaughtered. I do not know that one particular ointment has any very great advantage over another. I see a good strong antiseptic is the basis of most of them.

REPLY.

Mr. T. C. FLETCHER: Mr. President and gentlemen, before I proceed to reply to the remarks I should like to read a letter which I have received from our friend, Lieut. Brown, A.V.C.:—"Now about foul in cows. I am justly of opinion that the sooner you get a knife into any swelling that appears the better it is—of course I am speaking of recent cases, when you get a swelling of the skin above the claws. What I think to be the correct treatment is to open up, use plenty of resin ointment, and get your bill paid. I think if we incised more frequently and earlier we should have better results, and less frequently would the bone become affected, because I am certainly of opinion that the disease is due to the entrance of pus-producing organisms, and if this is so, evacuation, disinfection, and a soothing treatment must be adopted. Anyway, I can assure you that I have had a fair amount of success in getting at them in the early stages. If, however, the bone has become necrosed, you may, with daily attention, get a certain amount of improvement, but if fit, the best thing to do, I think, is to butcher, because the first loss is then the least."

Mr. Lloyd has mentioned the fact that foul is of tubercular association. I think there is no connection between the two diseases. You get cases of foul and tuberculosis in the same cattle. When you consider the number of cattle you get with tuberculosis I do not think it is unlikely that you will get the two symptoms on post-mortem. I do not think I have ever had any reason to think that foul in the foot is connected with tuberculosis. I do not think Mr. Lloyd can show me a case where he will get the tubercle bacillus in a case of foul. His method of treating these cases of foul are the methods that I account for under the heading of "Simple suppurative foul." I am quite convinced that Sulphuric acid may be a very good dressing, and I am quite open to conviction that egg and flour may be a good means of fixing Sulphuric acid, but the cases we get in this district are not cases we could turn out to grass and fasten this bandage on. If there are such cases we do not get them. The farmer uses something which he has bought at one of the Agricultural Shows which he has visited. I myself make up a particular remedy which I supply my clients with, and if a farmer finds a case of lameness, and the swelling at the top of the coronet, and there is no inflammation, if he uses my lotion I think he will cure slight cases.

Mr. Lloyd speaks of gravel as a cause of foul. I take foul to be something that is produced not from injury, and not from anything but an idiopathic affection produced in the cow which exhibits itself as foul. If you are getting an injury of any form to a foot between the claws you will get an inflammatory condition, but you won't get that particular smell that you get in a case of foul. I treat such a case as gravel in the foot, or injury to the foot in the inter-digital space. The President had eight or nine cases in one stable. I have never had above three, and I have some fairly large cowsheds.

Then comes the question of infection. I myself have never taken foul to be an infectious disease. I take foul to be a dietetic affection, arising from certain conditions of grass, or certain conditions of feeding the animal. If I were asked, I dare offer a sovereign to any man who could produce a case of foul in another cow by the ordinary means of infection, that is, putting a cow into the same standing that a case of foul has stood in, and using any other means. I will even let anyone take some of the discharge from an animal suffering from foul and bind it into the foot of an animal not so suffering, and will defy them to produce another case of foul.

Mr. Collinson uses a dressing that has a good deal to recommend it—powdered resin, pure carbolic acid, and vaseline. There is no doubt that carbolic acid is a very fine dressing for foul, and I think sometimes that we ought to persuade a man who has trouble with foul to use an antiseptic such as this for application between the claws, and having got that, I do not know of anything finer than Mr. Collinson's dressing.

I have had a very similar case to that mentioned by Mr. Hudson within the last month. What struck me about this particular case was the same thing that struck Mr. Hudson, that was the amount of pain that a cow could get from a little matter in the foot at the toe. I do not think I have seen an animal suffer more from a very slight cause, and I very nearly missed the cause of lameness. I had no bone trouble with the case. The small amount of matter, which would not amount to three or four drops, was let out and the case made a good recovery. A horse would not have exhibited a quarter of the pain that this cow did.

Mr. Sampson, in his practice, gets, I think, as bad cases of foul as I do, and I have nothing to say against his treatment, but to my mind it is very mild. You can put resin on a wound without seeing any particular effects of it at all. If it suits his particular practice and his particular cases, of course, he is perfectly right in going on with the treatment.

There are a lot of things that arise out of this particular disease—a lot of things I should like to know more about, and I expected perhaps some of you would have advanced treatment in the form of a serum, or a vaccine, but it has never been mentioned, probably, I think, because most of you treat it as a local disease due to some form of injury to the foot, whereas, I do not take it to be anything of that sort. I take it to be some form of idiopathic disease.

I thank you, gentlemen, for your attention to my paper. It is many years since I read a paper before an Association—I think the last one was when I was at College many years ago. I hope the discussion will induce you to pay a little more attention to a disease that ravages dairy stock to an enormous extent.

Mr. J. S. LLOYD: I propose that a very hearty vote of thanks be given to Mr. Fletcher for bringing forward such an interesting subject. I would like to say in passing that it brings forward some new ideas. The foul I got in Shropshire was certainly not the same foul that you get in Yorkshire.

Mr. S. E. SAMPSON: I have much pleasure in seconding the vote of thanks. I quite endorse Mr. Lloyd's remarks—the foul I used to get in Shropshire was not the same I get here in Yorkshire.

The vote of thanks was carried with acclamation.

Mr. T. C. FLETCHER thanked the members for the vote of thanks and the cordial way in which it had been received, and said that he was amply repaid by the interest the members had taken in the matter.

JOINT-EVIL IN FOALS.

T. BOWETT, M.R.C.V.S., Worksop.

Mr. President and Gentlemen—In taking this subject for my paper, I do so from rather a selfish point of view, for it is a disease in the discussion of which I hope to learn something which may be of use to me, and at the same time be of interest, and possibly of use, to others present.

To my mind, this disease has not, up to the present, received the attention from the veterinary profession to which it is entitled, since it is the cause of death in a very large percentage of cases of illness which occur among young foals.

Horses are very valuable at the present time, and are likely to remain at a high figure, so it is important that losses from this disease should be prevented as far as possible. It is unnecessary to go into the symptoms of an attack, as these are well known to us all. The cause of the disease, as far as is known, is an infection of the umbilical cord by some micro-organism, generally supposed to be the *Staphylococcus Pyogenes Aureus* or the *Streptococcus Pyogenes*, but my own opinion is that this is quite a supposition, and I am more inclined to think that the organism is specific, and is always present in the foaling boxes on certain farms. That the causal organism always gains entrance by the umbilical cord after birth from outside infection I am in doubt.

I can recollect in practice several mares from which, in spite of all precautions, the foals a few days after birth invariably developed "joint evil." The navels were carefully disinfected and tied with antiseptic cords, the mares often foaled on newly concreted floors, bedded with the best of wheat straw sprinkled with some antiseptic powder, and yet, before the commencement of the sloughing of the navel, the disease would develop. It almost seems that the cord becomes infected by some uterine discharge from the mare after birth, and in support of this, it is a fact that when such mares are allowed to foal out of doors—when the foals are likely very soon to move away from the place of actual birth—they very often escape an attack of evil.

Is it not possible also that in some cases infection is by means of ingestion and that the foal becomes affected from the mammae of the mare? I know of one large Shire stud where, immediately after birth, a rectal injection is given, the theory being that some cases of the disease are due to infection from the meconium if retained very long; but of this I have no personal experience.

As previously mentioned, one finds that a certain mare is always liable to breed a foal that will develop evil. Another mare on the same farm, providing there has not in the same year been a case of evil in her foaling box, will foal and the offspring go on all right.

I have also occasionally noticed that there will be losses among Shire foals on a farm, but that Hackney foals on the same premises will escape, and among the smaller ponies the disease, with me, is quite uncommon. Why is this? It seems to me, since the disease is much more frequently met with among Shires, that there is some uterine infection which is more common in this breed of horse, and may possibly be carried by the stallion. In defence of the Shire it is often held that foaling does not take place under such cleanly circumstances as it does with the thoroughbred and Hackney, but many of our Shire breeders leave no stone unturned in the way of disinfecting, etc., and yet they are troubled with this disease among their foals.

Very occasionally it is noticed that during a foaling season the cases that occur are among foals sired by a particular stallion, and sometimes quite a considerable number of his stock will be the subjects of the disease. This again seems to point to the possibility that in the seminal fluids or about the penis there may be some organism which infects the uterus of the mare, and which during pregnancy develops and afterwards affects the foal, and there are cases (though very rarely) when "evil" is seen in the newly-born foal.

Professor Penberthy, in a paper he wrote some years ago, said that out of the number of cases he investigated almost half the foals were prematurely born. If this was so, there must have been some uterine infection at work somehow.

Before proceeding further, gentlemen, let me say that it is not my opinion that these possible sources of infection are common. The organism usually attacks the navel from an outside source. However, from whatever source, infection takes place through the umbilical cord, and precautionary measures should therefore be taken in this direction.

The prophylactic treatment is the application of antiseptics to the navel. There is an element of doubt in my mind as to whether it is the better plan to instruct clients to tie all navels or to leave this out of the question, for unless it is properly done it may do more harm than good. Some thick fleshy navels at any rate, after being tied a few days and when sloughing commences, become very moist and make a splendid medium for microbic growth. The tying of the cord seems to hinder a natural drainage, so that, providing there is no excessive hæmorrhage, I think such a navel is better left untied, so that drainage take place, and the cord will shrivel and slough off better than if it had been tied.

My method of dressing is—immediately after birth, and during the first twelve hours, to immerse the cord several times in a 1/500 solution of perchloride of mercury in alcohol, which soon dries. After this to apply an antiseptic powder consisting of iodoform and boracic acid in starch. It is a mistake to apply aqueous or liquid dressings, as they tend to hinder the shrivelling and drying of the navel. Cleansing the teats and udder of the mare, and attention to the thorough disinfection of the foaling box constitute the preventive measures, with the exception that I have occasionally given an injection of Parke, Davis & Co.'s mixed infect-

ion Phylacogen. Foals given this injection remained healthy.

It is in the actual treatment that most of us, I think, make a poor show. Has anyone had a method of treatment to which he has adhered for more than two foaling seasons? I have tried on an affected animal injections of Phylacogen, commencing with 5 c.c. increasing to 10 and 15 c.c. given twice daily, but with no good results, though some practitioners have been very successful with the same method. Nuclein is useful in doses of 5 c.c. of a 2½% solution twice daily, and is a fairly successful remedy, though it has not in my experience given the good results at first anticipated. Another treatment, which with me has been the most successful, consists in dosing the foal twice daily with 20 grains of Pot. Iodide, and giving Hyposulphite of Soda to the mare in from half-ounce to ounce doses. It is also useful to apply anodyne liniments to the affected joints; and injections of morphia are useful to relieve pain.

Advanced cases with suppuration of the joints I have not touched upon, for, unless the disease is controlled before this stage, the animal—even if it recovers—is very unlikely to be of any use. Abscesses occurring in the muscles should be treated in the ordinary way.

So much for what little I know of this cause of high mortality in foals and its treatment. What I should like to see would be that veterinary surgeons who have the time and conveniences for scientific research should try to isolate the specific organism, and enable us to treat all foals on farms where "evil" is known to occur, and other valuable foals, with a prophylactic in the form of a preventive vaccine.

Before concluding my notes on this subject it might be said that navel infection does not always terminate in joint evil, but often is responsible for chronic cases of peritonitis in weaned foals and even in older animals; these cases I take it are affected by a different organism from that which produces the ordinary symptoms of "evil."

DISCUSSION.

The PRESIDENT: I am sure we are much obliged to Mr. Bowett for his interesting paper on an interesting subject that bothers most of us that have anything to do with breeding. I shall be glad to hear the experience of you gentlemen in the matter.

Mr. W. COLLINSON: I also wish to thank Mr. Bowett for his very able paper. As Mr. Bowett says, we get some farms where Joint Evil seems to be very common, and if you get a man that is breeding good horses, and any quantity of them, sometimes he will call and ask you your opinion, but in the majority of cases where we are called in the foal has got Joint Evil. I have got fairly good results by disinfecting the hind quarters of the mare a few days before foaling, and by inserting a pessary and leaving a couple more to be inserted. I believe in some cases the infection is not altogether due to the navel, because you find some of these Shire breeders will take every precaution as soon as the foal is dropped, and dress the navel with antiseptics every few hours, still they get the infection. I think washing the mare's udder with a good antiseptic lotion is a very good precaution, so too is every cleanliness with your loose box. With regard to treatment, I think Mr. Bowett is quite right; we none of us stick to any treatment sufficiently long to give it a fair trial. Some time ago I saw a recommendation for injecting Iodine into the Trachea. I tried this, but found it not to be effective—in fact, had I continued it there would probably have been a shortage of foals in my district. I think we really want something to act on the system generally. In the last two seasons I have used Parke, Davis's Mixed Infection Serum, and also taken precautions to dress the umbilical cord. I may say that this year I have had eight or

nine cases and have not lost one. Two of the foals will live and make "slaves," but the others have lived and made practically good recoveries. Of the two that have not made good recoveries, in one case the first abscess appeared on the off side on the ribs. I lanced that. A few days after he got a swelling at the back of the poll. The other case had a big abscess on his shoulder, and there was some slight contraction of the shoulder muscles. The main thing, I think, in a lot of these cases is the nursing. If there is someone who will keep getting the foal up—not let it lay too long, but will get it up to suck, it is a good help.

Mr. F. L. SOMERSET: I must say in the first place that I am of opinion that the infection in Joint Evil does enter by the umbilical cord. I do not place any faith in the insertion of antiseptic pessaries, or in sponging the hind quarters of the mare prior to the birth of the foal. The statement which has been made by the reader of the paper, and supported by Mr. Collinson and by the experience of most of us who have to deal with Shire foals, is that they seem to be peculiarly liable. The question is why? It is not because antiseptic precautions are not taken with that class of foal—where valuable Shire foals are bred there is as much care taken as in the case of thorough-bred stock, but the fact remains that the disease does occur probably more frequently in Shires than in any other class of horse. It will be recognised by all of us that prophylaxis is what we must aim at in a disease of this sort. In order to do this we must ascertain the cause. I think we may be assured that the disease is due to a germ. I think we may assume also that the germ obtains its access through the umbilicus. What does cause the disease to occur so frequently in the heavier class of foal? In my opinion it is because the navel is so much fleshier and thicker in the heavier class of foal, and therefore it becomes more easily infected in the longer time it takes to dry, and produces a suitable growing ground for any germ, and our efforts should be directed to having the navel dried up as soon as possible. I think a mistake is often made in tying the navel too low down and imprisoning the fluid portion of that part of the umbilical cord which remains attached to the body. In my opinion the cord should be severed so as to get all the moisture, or as much of the moisture, out of it as you can. That is, it should be tied about an inch from the body. Of course it is understood that antiseptic precautions have been taken both in the cleansing bath and the cleansing of the surgeon's or attendant's hands. I agree that fluid dressings are not advisable because they tend to keep the cord moist. The sooner the cord becomes dried up the less likelihood there is of the infection entering thereby and producing the disease. As to the treatment—when you get abscesses forming in different parts of the body, often a case assumes a hopeless outlook. Still, I have known cases recover by ordinary treatment of abscesses, and in other cases, as Mr. Collinson points out, the foal has lived more or less crippled for the rest of its life.

The sequels which you may get in cases of Joint Evil are perhaps not well known. I have come across one or two peculiar cases in older animals which I could only attribute to the sequel of evil when the animal was a foal. You will perhaps forgive me giving you an illustration. A case in which a two-year-old cart colt turned lame on one of its hind legs. The owner, a farmer, noticed the animal standing on three legs in the field: he had it brought up, got a blacksmith to it, and could find nothing. At the same time he poulticed. He was going to send for me the same day, but to his astonishment he found the colt perfectly sound. It went on for six months, and the colt did not do so well as the others. On another day, a matter of six months after the colt was first noticed to be lame, the farmer saw that it was lame again on the other hind leg. He sent

for me, and the colt was not quite so lame as on the day before. I noticed it was going generally stiff behind, perhaps more pronounced on one leg than on the other. The pulse was up and the temperature was up, and when I came to examine him over the kidneys I found that he flinched. He was treated for kidney disease, and apparently recovered to a certain extent, but not entirely. Later on, when I came to examine him, he had an intermittent pulse. The colt gradually got worse. I diagnosed heart disease, and told my client that I did not think the animal would get better. He, however, went on with the treatment, and when I was passing I called to look at the colt for curiosity. I found he was dying. I subsequently made a post-mortem and found valvular disease of the heart. The conclusion I came to was that portions of the growth of the valves of the heart had become detached and blocked vessels in the hind leg, thus causing the stiffness. On making the post-mortem I not only found the disease of the heart but one kidney had become converted into fat. On enquiring into the history of the case, I was told the colt had fallen as a foal, and it is my opinion that that disease of the heart was one of the sequels of evil when it was a foal.

With regard to Phylacogen treatment—I have not adopted it, but I should think it is very likely on the right lines. I should think in the case of animals that are worth while, like Shire horses, that if cultivations could be made and injected you would very likely get good results. In the cheaper animals the expense would probably be too much, but I certainly think it would be worth while trying in the more valuable animals.

Mr. HUDSON: I should like to mention a case I had on a farm some years ago. We had been troubled with joint evil of a virulent type for years. We took every precaution, even to the extent of having the floors taken up and repaved, and then we were subject to the evil. The farm was an old one and changed hands. The summer before it changed hands two mares foaled and the foals were lost. The summer after the new tenant reared seven foals without taking any precaution whatever. The only way I could account for the result was that it probably originated in an alteration in feeding and working. The mares in the first farmer's hands were well fed, probably too well fed, and were never overworked. In the case of the successor the mares were worked hard, they were not overfed, and were in good condition. Probably the mares were in a better state of health. I do not think the disease is due to a specific germ. I think it is due to the ordinary germ which sets up suppuration. It is probably to be found in every foaling box and in the neighbourhood of every yard where flies are about, and they probably carry infection to foals by settling. The rapidity with which some cases commence makes me doubtful as to whether infection always takes place in the navel. The effect of the injection of the rectum of the foal I think is useful. I think any means by which you can bring about a healthy state of the system are good. You cannot get a purgative to act so quickly as the injection into the rectum. Certain mares have a tendency to foals with a very thick navel, and that to some extent is a predisposing cause. I never thought there was anything in uterine infection, I think myself all foals are born healthy, and the only predisposition is in the anatomical construction of the navel. With regard to premature birth predisposing to it, I think the reason is that the foals are delicate and have a tendency to lie, and in lying rub the navel on the ground and increase the infection. As to tying—I always tie with elastic. I find that after a few hours the navel has shrunk. If you tie with elastic, as the navel shrinks the elastic tightens, so that you keep the opening perfectly closed. I tie by the white division of the navel cord. The alcoholic dressing is a very good one, but I think it is much improved

by the addition of Formalin, which, combined with Alcohol, is the best drying agent we have. The vaccine treatment I have had no success with. Occasionally I have had cases which have died from Peritonitis as long as six months after birth, and I find that those cases have often been due to rupture of an abscess which has developed in the internal portions of the umbilical vein.

I had rather an unfortunate experience with a case about two summers ago. It was a foal with umbilical hernia, which I "took up." A few days after I called to see how the foal was and the man said he was all right, but I did not find him so. The next day he died. When I made the post-mortem I found that in taking up the hernia I had punctured an abscess just above the umbilical vein.

The treatment I have adopted as a preventive has been exercise and physic to the mare. I find that veterinary surgeons and farmers are often afraid of giving purgatives to an in-foal mare. The practice I have advised on farms that have been susceptible has been the giving of a dose of physic as soon as they knew the mare was going to foal. I have also advised exercise and the keeping of the mare in work as much as possible in reason.

One of the most successful breeders I know is a man who foals perhaps four or five mares a year. I have done his work for I should think 20 years, and I can only remember one case of Joint Evil in that time. His farm is what we call one of our "sand farms" where they get more heating corn than in others. He attributes his success to giving a dose of physic. After the mare has foaled, instead of keeping her in for a few days, I think it advisable that she should have exercise within a few hours of the foal being born. I have certainly had less cases of Joint Evil since I adopted that practice. I remember a two-year-old colt with embolism of the mesenteric arteries with no signs of any worms, and I attributed that case to infection of the navel.

Mr. S. E. SAMPSON: I would like to add my meed of praise to Mr. Bowett's paper on joint evil. At this time when horses are so valuable one feels that it is necessary to save as many lives as possible. Undoubtedly it is an essential that the foaling box should be clean; but one has seen cases of endless expense, taking up floors, disinfecting walls, etc., and still one has had joint evil, when the next door neighbour has taken no precautions and has had no joint evil. It has struck me that the man who has the most money, and who can best afford not to work his mares, gets most joint evil. As to tying of the navel—I think the navel ought to be tied, but, to my mind, it is useless to tie a navel without first expelling the coagulated blood from it up to the white line, and also disinfecting the navel. I think that before any treatment is adopted you want the passage of the bladder well disinfected, and I prefer to use in that case a mild (1:1000) solution of Perchloride of mercury, injected into the bladder, and then tie well. With regard to the method of treatment that one adopts for joint evil, we have all been subject to "fits." We may not have tried these things long enough, but it has struck me during the last fifteen years that there are no two seasons of joint evil alike. You meet one season with a mild form, such as I take it we have had in Sheffield this year, where you get one or two joints swollen, and the foal has a slightly increased temperature and never leaves off sucking. About two years ago we had what I call a severe form. In the severe cases I do not think treatment is of much avail. In those cases where you get a mild affection I have had most success with the thorough antiseptic treatment of the navel, combined with a saturation of the animal's carcass of Pot. iod. and Salicylate of soda. I have a few cases in mind that have been treated in this way, and I have not spared either. I have given what I call heroic doses, and it has had the

desired effect. The first case was a foal three weeks old, which was lame in the stifle, in fact it was swollen to such an extent that you would have thought it would burst in a day or two. I gave 15 grains of Pot. iod. and 30 grains Salicylate of soda, and gradually increased the doses. I only saw him three times, and the stifle went down. The next one was a foal a week old. He was lame on one hind leg from hock trouble, and in one knee with pervious urachus. I adopted the same treatment there, and this foal had recovered when he was a fortnight old. The next one, which did not make such a good recovery, was one that had both hocks and one knee affected. He was three weeks old when I saw him, and by the time he was two months old he was doing well, although one hock was slightly enlarged. Another one is a pony foal. He had one hock and one knee affected. After he had the treatment he went sound on the hock on the fourth day, and subsequently his knee went right. He can now gallop about.

The only case in which I have used Phylacogen treatment has died. He had what I thought was suppurative condition where his temperature was very high. He developed abscesses. I thought he was worth spending money on, and tried the Phylacogen treatment. He died, and on post-mortem I found he had a number of abscesses in the lungs. On enquiry with regard to the mare, I found that she had not worked at all and had had no exercise, but had had as much corn as she could eat, also that she had had what they called a cold. This particular foal which failed to respond to Phylacogen and Pot. iod. treatment, I think, was a case of strangles inoculated from the mare. When one gets these different types of joint evil, that I feel certain we do get, one wonders why we should get different types in successive seasons. I saw in the veterinary press an account by one of our members, who I am sorry to see is not present to-night, of a particular kind of serum, and a table of results which were satisfactory. He records that he has had very good results with this disease, but from reading, I think the cases he has had have been only the kind where the trouble is localised to a joint, and there are no bodily symptoms present.

I am very much indebted to Mr. Bowett for bringing this matter forward, and I hope we shall be able as a profession to derive some benefit from these discussions. Farmers generally seem to think very little of the skill of the veterinary profession in dealing with joint evil.

Mr. T. C. FLETCHER: I would like to ask Mr. Bowett what treatment he adopts in pervious urachus. It perhaps may not bear intimately on joint evil, but I have very often found a connection between the two. I have tried several different methods of treating pervious urachus, but not one that I should use in the treatment of the next foal. I have found in my practice during this last season that we have not had the extensive suppurative action in joint evil that I have seen in former years. I have also, like some others, been "round the clock" in the treatment of navel ill. It has very often occurred to me that we are not quite conversant with the fact as to whether the infection does get in at the navel. We get navel ill such a long time after birth with no symptom showing within an ordinary time, say three weeks after birth. I have seen cases of navel ill develop say six, eight, or nine weeks after birth, and I believe, although I have not a record of a case, that I have seen it long after that. The question of tying the navel is a difficult one. Many foals are born during the night, and the farmer, when he is tired after a hard day's work probably, does not carry out the disinfection as we would like him to. I have seen cases in stables where they have taken absolutely the greatest care in disinfecting. I have provided the disinfectant, and also provided the cord specially prepared for the purpose, and it has been a source of wrath to me that the foal has had joint evil after all. I am a learner as to joint

evil in foals, and I do not think anyone has a treatment that a man could adopt with certainty of success in 50 per cent of the cases he deals with. Phylacogen I have not yet tried. I always like to let someone else with more courage and a deeper pocket try these experimental treatments, and then when they record them I reap the benefit of their experience. I thank Mr. Bowett for his paper. It was not half long enough, and he has not told us as much as he could. He has had a great deal more experience than he has told us of.

Mr. J. S. LLOYD: I have had no case of joint evil since I left practice sixteen years ago. I foal a mare every year. I clean out the box a few days before foaling, and leave the mare out until she is ready for foaling. I take no precautions with the foal's navel at all, and I have had no joint evil. My present experience, as I say, is only one foal a year. When I was in practice I must say I saw a great deal of joint evil, and at that time the antiseptic precautions taken were *nil*. Some cases got well, and others were so badly affected that they were killed. What I do want to say is this—some 12 or 15 years ago the Department of Agriculture and Technical Instruction for Ireland had Prof. Nocard over from France, and he, along with Prof. Mettam, went very deeply into the question of navel ill, and white scour in calves, and it was proved pretty conclusively then that there was a germ of the fowl-cholera type that was responsible for the trouble. They also proved that they could get the disease by infecting the navel or by feeding the calf. I think, if we could have some investigation into joint evil, and we could produce some germ we should know what we were fighting. At present I cannot say I am in agreement with Mr. Hudson in saying that there is no infecting organism. One man does not disinfect and another man does. The man who is dirty may not get joint evil, and the man who is clean does get it. I quite agree with Mr. Hudson that plenty of exercise, and keeping the mare in a healthy state has a good deal to do with it. I think if an investigation were made and the cause of the trouble were established it would be of great advantage to the veterinary profession.

The PRESIDENT, in calling upon Mr. Bowett to reply, referred to a farm where three or four foals are reared every year, and said there was one mare there the foals of which for three years in succession had joint evil, and none of the other foals on the farm were affected.

REPLY.

Mr. BOWETT: Most of the gentlemen who have taken part in the discussion have not addressed any personal questions to me, and their remarks to me have been interesting. As far as I am concerned in bringing this paper forward, it has been a pleasure to listen to the discussion, because it has cleared up several points in my mind on which I was in doubt. I quite agree with Mr. Somerset as to the cause of the evil in the case of valvular disease of the heart. With regard to Mr. Hudson's remarks—I am still of opinion that certain mares are "carriers" in some way of Joint Evil. With regard to the case where he had a lot of trouble with Joint Evil, and then when a new tenant took the farm there was none, probably the introduction of new mares had a lot to do with it. Mr. Sampson mentioned Pot. Iod. This has had the best results of anything I have tried. I think it is beneficial to give Hypo-sulphite of Soda to the mare, because it has an action on the blood and has a sort of preservative power. I was looking up an account of Hypo-sulphite of Soda, and found mention of a Professor who had given fairly large doses to dogs, and after treating them in this way for some time he had drawn off the blood of a dog he had treated, and also taken a sample of another dog that had not been so treated. The blood of the dog that had not been treated became putrid in a few days, and the blood that had been treated kept for about three weeks.

Mr. Fletcher asked how I treated "Pervious

Urachus." Personally, I do not think binding is much good because the band slips off. I think the only thing to do is to keep the navel clean and apply Carbolic Acid.

Mr. Lloyd seemed to be somewhat of my opinion—that the disease is specific. I still think it is. If some investigators would take the trouble to try and isolate some organism and find out the organism, I think the treatment of this disease would be very much simplified.

Turning again to Mr. Hudson—I never thought of tying the navel with elastic. I certainly think that in the future I shall try it.

I am sorry to disappoint Mr. Fletcher in giving such a short paper. There is a certain amount of truth in what he says, but I amply rewarded for bringing this paper forward, because I think the discussion has been a very good one, and I certainly have learnt a good deal from it.

A hearty vote of thanks was given to Mr. Bowett for his paper, on the proposition of the President, seconded by Mr. S. H. Nixon.

Mr. F. L. SOMERSET: Before we part to-night, I wish to propose a very hearty vote of thanks to our President, not only for the able manner in which he has presided over us during his year of office, but also for the generous way in which he has entertained us to-night.

Mr. S. E. SAMPSON: I should like to second the vote of thanks to our retiring President, not only for his hospitality to-night, but for the way he has conducted the meetings during his year of office.

The vote of thanks was carried with acclamation.

The PRESIDENT: Mr. Somerset, Mr. Sampson, and Gentlemen—I thank you very much for the vote of thanks and the way it has been received. I am afraid the thanks are not due to me. It is very kind, however, of you to thank me for what I have done. I know that this chair could have been filled by better men (cries of No, No!). This year has been a very awkward one, and if my efforts have come up your expectations, I am more than satisfied. J. S. LLOYD, Hon. Sec.

The Vacuum Process of Cooking Meat in Tins.

The method of preserving food stuffs of all kinds invented by Appert in 1809 has, until recently, been universally adopted. Any modifications have been more in detail, rather than in the principle of exhausting air by heat, and prolonging the cooking of the sealed tin, or other vessel, at a high temperature, so as to destroy any spores present. The Appert process has generally involved the previous cooking of the meats to be preserved, and the use of either canning vats or retorts, and while this method is satisfactory in many respects, it involves the loss of weight in cooking, the loss of flavour, and a certain percentage of loss due to blown tins.

Preservation of Hams—the Vacuum Process.

The preservation of whole hams, principally for export to tropical countries, has become quite a large industry of late, and looks like assuming larger dimensions in the future, and the new process can undoubtedly be applied to this purpose with immense advantage.

The process in itself is very simple. Each ham is boned out, and placed in a pear-shaped tin, of a size suitable to the size and weight of the ham. The original shape is maintained, and when the boning out process has been completed some flavouring substances are lightly sprinkled over the cut surfaces of the meat, which is then pressed together, and placed in the pear-shaped tin, which it should fill tightly. The top of the tin is securely soldered on, and a small aperture beside which a blob of solder has been placed, is left towards the narrow end of the cover of the tin. The tin is now ready for treatment. It is placed in a vacuum apparatus

consisting of a circular chamber, in which is a rotating platform actuated from the outside. This chamber will hold some twenty ham tins, and it is charged through a door in the side.

When the chamber is fully charged this door is closed tightly, and the air of the chamber is exhausted by means of an oil sealed pump. Obviously, in exhausting the air of the chamber, the air will also be exhausted through the apertures on the lids of the tins. Hence the contents of the tins will, for the time being, be in a vacuum. In this condition the aperture of each tin is soldered over by means of an electric soldering bolt, which can be moved from the outside of the chamber in the vacuum, within a sufficiently large field to enable a certain amount of freedom of action inside the chamber. The operations inside the chamber are seen through a small observation window, and an electric light enables the soldering bolt to be accurately handled. Soldering having been accomplished in one tin is successfully carried out on the others, the moving platform in the circular vacuum chamber being actuated from the outside, so as to bring each tin under the field of the soldering bolt.

As soon as the apertures have been soldered, a valve is opened, and air is allowed to enter the circular vacuum chamber, and it will be observed that the tops and bottoms of the tins immediately yield to the atmospheric pressure, being pressed inwards. Any tins which do not yield in this manner are faulty, and have been badly soldered. The defect should be remedied, the aperture in the cover re-punctured, and the tins should be treated again. The tins can now be removed from the vacuum chamber, and are ready for the next operation.

Cooking.

The tins are now placed in a cage belonging to a vertical autoclave, and closely packed together. The number of autoclaves used would be in direct proportion to the business to be done. The cage of the autoclave is carried by means of tackle suspended from an overhead rail. It is raised sufficiently high to clear the top of the autoclave, and is then lowered into it, the tins being submerged in a bath of hot water. The autoclave has a steam jacket, which maintains the temperature of the water inside, but when the cage has been lowered the cover of the autoclave is screwed down, and by means of steam pressure the temperature inside is elevated to 240° F., at which degree it is maintained until the hams are cooked, the length of time required varying slightly, according to weight. A large ham will take about four hours to cook, smaller ones being in proportion; the average time required being 3½ hours.

This operation of cooking the fresh hams in the tins prevents any loss of weight, and also maintains all the flavour of the meat. The advantage of cooking the tins in water inside the autoclaves, lies in the equalization of the pressure which results. In so far as the keeping properties are concerned, it may be safely stated that the hams are never likely to deteriorate or alter in any way within the limits of several years after being tinned in the manner indicated.

Preserving generally.

We have spoken only of the tinning of hams by the vacuum method, but the same method can be applied to corned beef, potted beef, brawn, sausages, galantines, and every other form of preserved meats. Army rations, such as sliced bacon, bacon and vegetables, or meat with vegetables, can be expeditiously and effectively canned by this method, which may be described as being applicable to the preservation of every kind of perishable food in tins. The adjustment of the vacuum chamber to packages of different sizes is a matter of detail.

Assuming that anyone wishing to use this process has no steam or other plant at all meantime, it would be necessary to obtain the following:—

Steam boiler, electric current, vacuum apparatus, vacuum pump, autoclaves; also a general assortment of tables, tools, tanks for steeping (if necessary), and other small accessories.—(L. M. DOUGLAS, F.R.S.E., in *Meat Trades Journal*.)

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Circular Letter to all General Officers Commanding-in-Chief, and Officers Commanding Districts.

It is notified for information that men who are *bona fide* students of any recognised Veterinary College and who are now in their third or fourth years of study should not be accepted for enlistment.

Extract from *London Gazette*,
WAR OFFICE, WHITEHALL, Oct. 29.

SPECIAL RESERVE OF OFFICERS.

The surname of Lieut. D. Blyth is as now described, and not as stated in *Gazette* of Oct. 1, 1914.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieuts. to be temp. Captains:—H. A. Idenden
Dated Aug. 18. J. E. Porrett (Oct. 16.) T. A. I.
Anderson (Oct. 19.) A. Burnfield (Oct. 20.) W. G.
Green (Oct. 21.)

Nov. 1.

Temp. Lieuts. to be temp. Captains:—W. B. De Vine,
dated Aug. 28. J. Bradley (Sept. 7.) T. H. Tranter (Oct. 1.)

To be temp. Qmr. with hon. rank of Lieut.:—J. Daunt.
Dated Nov. 2.

Nov. 3.

To be temp. Lieut.:—C. M. McNeill. Dated Oct. 21.
To be temp. Qmr. with hon. rank of Lieut.:—J. King.
Dated Nov. 4.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Nov. 1.

To be Lieut.:—J. McGregor. Dated Nov. 2.

The following casualties in the Mediterranean Expeditionary Force are reported:—

DIED—Pte. F. J. Stevens, 5662.

WOUNDED—Cpl. J. Bibby, 2. 1st Australian Vet. C.

KILLED IN ACTION.

FREDERICK SPENCER PARR, Capt. 1/4 Leicestershire Regiment, killed whilst leading the attack on the Hohenzollern Redoubt on Oct. 13th. Aged 21 years.

Captain Parr was the elder son of Mr. J. G. Parr, veterinary surgeon, Leicester.

OBITUARY

R. B. AULTON, M.R.C.V.S., High Street, Burton-on-Trent.
Graduated, Lond.: Dec., 1887.

Mr. Aulton died Monday, Nov. 1st, aged 51.

ARTHUR PLANT, Buxton, M.R.C.V.S., Derbyshire.

N. Edin.: April, 1883.

Death occurred on Sunday, Oct. 31st, aged 59.

Principal JAMES MCCALL, Glasgow Veterinary College,
83 Buccleuch Street, Glasgow.

Graduated, Edin.: May, 1860. Fellow, Feb., 1877.

Principal McCall was President, R.C.V.S., 1890-91;
Vice-President, 1868-9-71-3-4-5-7-8-9; Member of
Council, 1884-95, 1899-1915.

We regret to announce that Professor James McCall, F.R.C.V.S., founder and Principal of Glasgow Veterinary College, died at 4 Wilton Crescent, Kelvininside North, at 3 a.m. on Monday. He had reached the advanced age of 81 years, and up till five weeks ago he was attending to his many duties as veterinarian and public official.

At that time he contracted a cold, and, internal complications supervening, he passed away.

The history of Glasgow Veterinary College (Incorporated) is largely the history of Principal M'Call. He was its founder in 1863, and continued to fill the office of Principal up till his death.

Born at Newton-on-Ayr, he received his early education at Wallacetown and Ayr Academies. His father was carrier between Glasgow and Ayr, and one of his brothers was the late Captain M'Call, who for many years was Chief Constable of Glasgow. After leaving school he entered the office of a firm of lawyers in Ayr, but his fondness for horses soon caused him, against parental wishes, to desert the legal profession. He secured a situation in Glasgow with Messrs. Pickford and Co., the railway contractors, and afterwards was appointed superintendent of the horse department of that firm in London, having as many as 1000 horses under his care in his new position. It was here that he first began seriously to study the medical treatment of horses, and determined to become a veterinarian. With this aim he left London and enrolled as a student at the Dick Veterinary College, Edinburgh, where he graduated at the end of the two years course of that period.

Coming to Glasgow in 1859 he opened practice in Hope Street. Encouraged by the presence of a number of Edinburgh students in the city, Mr. M'Call decided to deliver a course of lectures, and from this modest beginning the Veterinary College of Glasgow was evolved. In 1862 he applied for a Charter for the establishment of the College. At that time there were only two veterinary colleges in the United Kingdom—the Dick College (Edinburgh) and the London College. The application was opposed by both these institutions, but in 1863 the Charter—signed by the late Queen Victoria, a circumstance of which Principal M'Call was exceedingly proud—was granted. From that period onward the College has steadily progressed. The opening of the session 1909-10 witnessed the College transformed from a private to a public institution, with a duly appointed board of governors, and approved by the Scotch Education Department. This was a consummation which Principal M'Call had eagerly striven for, his efforts in this direction having begun nine or ten years previously.

Principal M'Call's abilities were early recognised by the Government and by the local authorities, and he held numerous public appointments, including that of inspector to Glasgow Corporation under the Diseases of Animals Acts. In many respects he was a pioneer in the public health matters of the city. He was instrumental in raising the first prosecution of an exposé of a carcass affected by tuberculosis. It was also largely owing to the efforts of Principal M'Call that Glasgow earned the distinction of being the city which first introduced market meat inspection and the licensing of city dairies. In regard to Glasgow's experiences in these matters Principal M'Call gave evidence before a Select Committee in London. He also gave evidence before various Royal Commissions, and during the period when Sir George Brown was head of the veterinary department of the Board of Agriculture he assisted in the drafting of the Tuberculosis Bill.

In his private practice he was for almost 50 years veterinary surgeon to the railway contracting firms, Messrs. Wordie and Co. and Messrs. J. and P. Cameron, and the East Coast Railway Company carting department since they established their premises in Glasgow. He also held special appointments during epidemic periods in Scotland; and during the rinderpest period in Ireland he was appointed to act in conjunction with Professor Ferguson, the Irish veterinary inspector. For many years he was veterinary referee to the Glasgow Agricultural Society.

Early in life Professor M'Call engaged in farming, and naturally he turned his attention to stock breeding,

chiefly to the local breeds—Clydesdale horses and Ayrshire cattle. His first farm was Gallowhill, Carmunnock, which he entered in 1865, and where he bred the well-known Prince of Wales horse Cedric. In 1879 he became occupier of Flemington, Cambuslang, a farm of 400 acres. He afterwards took over Blairtummock, Easterhouse, a small entailed estate with house and farm of 150 acres. In 1895 he went to Burnhead, Kilsyth (since occupied by his son, Professor John R. M'Call). For six years following he occupied Woodend Farm, Kilsyth.

Principal M'Call, who was twice married, reared a family of nine sons and seven daughters. In his profession he is worthily followed by five of his sons. His eldest son, Dr. James M'Call, besides being a doctor of medicine, is a veterinary surgeon, while of recent years one of his chief assistants in the Glasgow College has been Mr. John R. M'Call, Professor of Pathology and Professor of Veterinary Science in the West of Scotland Agricultural College. At present Professor John R. M'Call is serving with the Mediterranean Expeditionary Force as a member of the Veterinary Corps.

Of his other sons, Mr. George M'Call is veterinary inspector to the Government in South Africa; Mr. Stewart M'Call, director of agriculture in Nyasaland; and the two younger sons, Frederick and David, are both qualified veterinary surgeons. All of these four are at present serving with the forces in different parts of Africa.—*Glasgow Herald*.

Well-known V.S. a suspected Spy.

"A man I know and his uncle, a well-known figure in South London, motored out recently Reigate way, where the older man has property. They took with them as chauffeur a Belgian boy whose command of English is small.

Suddenly 'bang-bang' went a back tyre. 'Bad-bad,' said the Belgian, 'sorree.' He was sorrier when the Stepney proved to have a flaw. They tried patching one tyre with the other. It was no go. At last they hailed a passing car and asked the old gentleman driving it to call at the nearest garage and get a tyre sent back to them. Would he take the young chauffeur with him? Oh yes, on the step.

Hours went by and my friend's uncle, notoriously impassive, exploded into unprintable language. Then the missing chauffeur turned up in a military car. 'Orrible,' he groaned, and the story they got out of him was to the effect that the old gentleman no sooner reached the garage than he accused his passenger of being a German and called in the police. 'Why the folk you were driving were Germans,' he said. 'That old man was the image of Count Zeppelin.'

And sure enough, my friend tells me, his uncle does faintly resemble the Count. Fortunately the boy, though without his passport, was able to give his employer's name, which was familiar to the local police sergeant. An officer in the garage at the time volunteered to lend his own extra tyre, and this ended the chapter of misfortunes.—*Sunday Times*.

Now this "image of Count Zeppelin" is a member of Council R.C.V.S., and a well-known practitioner in South London: none other than Mr. T. Salusbury Price. We congratulate him on his escape.

The Union Government of South Africa has arranged to send to the Royal Veterinary College of Ireland for the forthcoming session four student-scholars to be trained for the veterinary profession. Several of the College graduates have in recent years been in practice in South Africa—practically all of them being in the employment of the Union Government.

The Life-History of *Nematodirus Filicollis* Rud.

An interesting account is given of this fairly common nematode parasite of the sheep's intestines, by Charles L. Boulenger, in *Parasitology* (Vol. VIII., No. 2, September, 1915). The eggs when laid contain an embryo with seven or eight cells, and pass out of the infested host with the faeces. They develop slowly, and even under favourable circumstances the embryos are not ready to hatch until 24 to 28 days have elapsed. In their early stages the embryos are unable to withstand desiccation and are killed if frozen or subjected to high temperature, but the sheathed larva can resist complete desiccation for at least 20 months. In one experiment three larvae were subjected to a temperature of 70° C. for two hours, and of these two survived and were swimming about actively after remoistening. It is evident, therefore, that these parasites are very resistant and are capable of being blown about and spreading the infection. The article is accompanied by two excellent plates illustrating the various stages of the parasite.

From a speech by Dr. Latham, at the recent Special Schools Biennial Conference:—

"The Tubercle Bacillus was discovered by a German and has many of the characteristics of the German: it is found everywhere; it prefers to work in the dark; it loves to attack the weak. Moreover, when it seeks a place in the sun it invites disaster."

Plague and Rat Destruction.

Some interesting facts and figures are given by Dr. H. M. Crane, health officer to the Calcutta municipality, in a report recently issued recommending the abolition of rat destruction. Last year 115,561 rats were destroyed, the average number during the last seven years being about 100,000 per annum. Rats are drowned in disinfectant solution and then incinerated. The annual amount expended during the last few years has been about Rs. 6000.

"My reason," he writes, "for recommending the abolition of rat destruction are: (1) the vast majority of rats are caught in a few *dal* godowns which simply swarm with rats—in fact, the supply seems inexhaustible; (2) there is absolutely no relation between the incidence of plague in a given district and the number of rats caught; (3) there seems no doubt that the epidemic of plague is disappearing spontaneously. In 1912 there were 1831 deaths; in 1913, only 852. In 1914 a further reduction to 442 deaths occurred, whilst this year there have been only 190. Last year the city was free from plague for three months, and this year there seems every prospect of it remaining free from the epidemic of plague for six months or more."

After some discussion, the Committee decided that rat destruction should be continued, but that the health officer should be asked to formulate a more effective plan of dealing with the problem.—*The Lancet*.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.		Outbreaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended October 30	14	16	9	28			23	51	1	59	197
Corresponding week in											
1914 ...	10	11			3	6	†	†	1	99	702
1913 ...	6	7			3	6	25	44	7	62	710
1912 ...	11	11			6	17	22	32	22	49	880
Total for 44 weeks, 1915 ...	477	543	21	115	41	74	||702	||1509	166	3450	14937
Corresponding period in											
1914 ...	620	679	24	124	86	265	†1530	†2642	159	3682	35508
1913 ...	458	507			130	322	2103	4158	148	2110	27650
1912 ...	650	732	32	639	154	288	2502	5317	208	2528	34377

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked:—

Board of Agriculture and Fisheries, Nov. 2, 1915

|| Figures for thirty-one weeks only.

IRELAND.	Week ended Oct. 30	...	...	...	...	...	Outbreaks	6	3	40
							2			
Corresponding Week in										
1914 ...	...	...	...	...	...	...	1	5	6	13
1913 ...	...	...	...	...	1	1	1	6	...	45
1912 ...	...	...	1	18	...	...	...	5	4	22
Total for 44 weeks, 1915	...	1	1	...	1	3	64	346	219	1256
Corresponding period in										
1914 ...	...	1	76	957	...	...	71	434	178	880
1913 ...	...	...	...	...	1	1	110	429	126	822
1912 ...	...	3	66	374	...	...	58	290	198	1603

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Nov. 1, 1915
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1427.

NOVEMBER 13, 1915.

VOL. XXVIII.

BOVINE TUBERCULOSIS.

One of the inevitable effects of the war has been a great subsidence of activity against and interest in bovine tuberculosis. From one point of view, this is not regrettable. For years both the agricultural and the veterinary press were flooded with matter relating to the subject. That in the agricultural journals did good work in educating stock-owners; but a great many of the papers appearing in the veterinary press were little more than repetitions upon a thread-bare theme, and few of them succeeded in advancing the subject. It is not to be regretted that the number of such papers diminish.

The suspension of the Tuberculosis Order is another matter. However unavoidable it was, it was none the less undeniably a national misfortune. But the evil can be materially modified by individual voluntary action on the part of stockowners against tuberculosis in their own herds; and our profession can both prompt and aid such action. Many veterinary surgeons, long before the coming of the first Tuberculosis Order, were doing their best to induce farmers to work against tuberculosis; and some of them succeeded in doing great good in their own districts. Those who still keep up the endeavour will probably find that the task has become much easier since a Tuberculosis Order has been in force, if only for a comparatively short time.

One of the results of legislation against any animal contagious disease is that it always has an educative effect. It instructs the less educated section of stock-owners regarding many points in connection with the disease which they had previously failed or refused to grasp, and it helps them to realise the importance of the disease. Our legislation against tuberculosis was not in force long enough to have full effect in this direction; but it will certainly have effected something. Further, all farmers realise that it has only been suspended owing to the war, and that its re-introduction afterwards is certain. For these reasons, farmers will be more ready to work against tuberculosis than many of them were three years ago.

On the whole, it is probable that the good sense of farmers and the advice of veterinary surgeons will prevent any very serious effects from the suspension of the Order. Undoubtedly we are not making the headway without the Order that we should have done with it; but when the disease is under legal supervision again, we expect to find that it has tended rather to decrease than to increase during the interval.

AN UNCOMMON SPRAIN?

Subject. A light draught mare.

History. The animal—a ringworm case—was picketed in the open in the usual way, *i.e.*, secured to a picketing line in front by a head rope from the head-collar, and to a peg behind by a rope from the heel shackle. In this instance the off hind limb was shackled. During the night the animal got cast, through getting the near hind leg over the head rope, this no doubt having been tied too long. As regards the position of the animal when cast, excepting that the near hind limb was pulled forward by the head rope the only information obtainable from the picket was that the mare was "tied up in a knot."

Symptoms. When seen next morning the animal was standing quite easily. The near hind limb was advanced a little and held in a state of flexion, as seen in photograph 1. There were no indications



No. 1.

of pain as shown by restlessness, sweating or blowing. The heel of the limb was a little chafed by the rope, but this was insignificant. In progression there was no difficulty in bringing the leg forward, the foot being lifted so that the toe did not catch the ground.

Having advanced the limb there was hesitation to put any weight on it. Repeated attempts were made by the animal as if to try what amount of weight the limb could support.

When forced to move forward at this stage the limb collapsed. The quarters sank very low, all the joints from stifle downwards were flexed. The off limb was quickly advanced to relieve the near

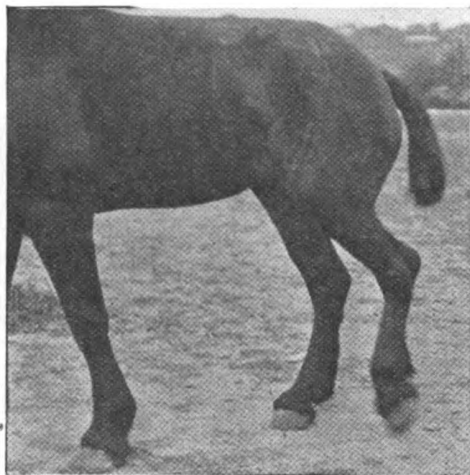
limb of its load and to raise the quarters. Photograph 2 shows the sinking of the quarters and the off limb just advanced.



No. 2.

Photograph 3 shows the weight on the off limb, the quarters raised to the normal height and the commencing advancement of the near limb.

There was no observable swelling in any part of the limb, and when moved by the hand in all directions there was little or no flinching as if the movements produced pain.



No. 3.

Pressure over all the parts from the hip downwards did not give any indication of the whereabouts of the injury, excepting that there appeared to be slight tenderness behind the upper half of the tibia, but compared with the degree of lameness the tenderness was inconsiderable.

Diagnosis. Collapse of the limb when weight was placed on it, considered with the absence of pain or swelling, suggested paralysis.

Examination of the photographs and knowing the condition was caused in all probability by the

animal struggling with the limb forcibly extended, and that the termination was rapid and complete. recovery seems to strongly indicate injury to the gastrocnemius, and most likely to its muscular portion.

Treatment. The animal was turned loose in a box, physicked, and embrocation applied over the posterior tibial region.

Termination. The condition improved daily, and in ten days the animal was quite sound.

W. KENDRICK, LT., A.V.C.

Chilcomb, Winchester.

FOUL IN THE FEET OF CATTLE.

The reading of Mr. Fletcher's practical and suggestive paper which appeared in the issue of last week has tempted me to make a few observations upon the disease. The disease foul or loo—it is a great pity we cannot disband these barbaric terms and replace them with something more scientific and descriptive—is seen most commonly in low-lying, marshy lands, although it is by no means uncommon in the cattle pen.

Predisposing causes. An abrasion of the skin is essential at the outset. By that I do not mean an actual, visible wound; a breaking down of the epidermal layer and exposure of the subcutis in the region of the coronary band and interdigital space may be all that is necessary. Such a condition can be produced by cattle grazing on low, wet pastures during a rainy season, particularly where the grass is coarse and "rank"; it is also seen in pastures covered with hoar frost. In the case of the former, the continual wet softens the horn at the coronet, separates it from the coronary band, and so develops a pocket for debris, while the roughness of the grass tends to injure the skin. There is another cause which comes under this head, and is worthy of consideration. Foul is most commonly seen in the hind feet, owing partly to the fact that the distance from the centre of the circulation is greatest, and that the hind legs are more liable to bacterial contamination than the fore feet.

Actual cause. This is purely bacterial and purely local. Foul in cattle is synonymous with quittor, poll evil and fistula in the horse. The same types of causal bacteria are in evidence, and further, the same structural and circulatory local drawbacks are encountered, *i.e.*, bacteria invading ligamentous, osseous, cartilaginous structures as found in the foot, the poll, and the withers; which means the organs affected are lowly vascular, being nourished by a process of osmosis only—not over perfect at that—and this in turn demonstrates that the cellular and humoral protective mechanism of the blood is imperfectly developed and unable to cope with such an infection to the full.

From the examination of many cases (biologic and microscopic) I am convinced the staphylococcus albus and aureus are the primary causative organisms in most cases: and while streptococci occasionally take first place, the secondary bacteria to invade

the injured parts are the *B. coli*; sometimes the *B. pyocyaneus* and, very occasionally, *B. necrosis*. Prevent access of any or all of these disease producers and we would never find cases of foul in cattle. It must be pointed out, however, one does occasionally come across tuberculosis in this region. I can remember having seen two cases confirmed. Actinomycosis is also not unknown here; I have met with five cases in practice, and it is quite feasible to suspect Botryomycosis in this region, but this condition I have never seen, or, to be more exact, diagnosed.

Treatment. Bearing in mind that we are dealing with a local bacterial infection, which in point of fact demonstrates a breakdown of the protective body mechanism at the hands of the aggressive bacteria, and at a part—as we have already seen—where the bacteriotropic elements are none too plentiful, the first thought which occurs to the practitioner is, How can we augment those immunising forces? i.e., by increasing the local blood flow. But it might be argued there is too much blood there already, as witness the throbbing in the artery, the tense and painful condition of the parts, the continual “lifting” of the foot, and the constitutional disturbance; all pointing to inflammatory tension and stasis. Stasis—that is the condition we are up against at this stage. The bacteria have gained a footing, the endo and exotoxins along with bacterial proteins have exhausted the immune bodies and the phagocytic elements in the region. Not only that, but through the calcium content blood coagulation has completely taken place, shutting off all chance of new blood and serum rich in immune bodies reaching the parts.

To alter this, local and systemic lymphagogues and decalcifying agents should be used. The administration of full doses of Citric acid combined with a vaso-motor dilator—of which there is none better than Tinct. aconiti, locally deep scarification of the parts, after which the whole leg should be placed in a hot bath containing Citrate of soda and common salt, while at this point Bier's treatment should be applied, care being taken that venous only, and not arterial pressure is applied. This combined treatment will bring about a rich anti-bacterial flow through the whole infected zone, and flush the parts with rich immune sera.

Antiseptics, particularly those of the albumin coagulating type, should be severely condemned.

Provided we are called in before ligamentous necrosis, ulcerative arthritis, periostitis combined with deep seated osteitis, sets in, nature possesses all the remedial agents we require—with this exception, perhaps, an antigenic stimulus in the shape of autogenous vaccines. These, in my hands, have given excellent results. Of course, in advanced and neglected cases heroic surgical interference holds out the only hope; free use being made of the curette, and even amputation. Here also the free use of antiseptics thwarts nature's healing efforts.

W. M. SCOTT, F.R.C.V.S., F.R.M.S.
Bridgwater.

ABSTRACTS FROM FOREIGN JOURNALS

SPORE FORMATION IN GLANDERS BACILLI.

Carpano, at the end of 1912, published some observations upon the glanders bacillus (*Il Moderno Zooiatro*). In cultures of the bacillus, he observed, in addition to the ordinary forms, threads of varying length and of a thickness which was sometimes variable and sometime uniform. These threads are neither involution nor degeneration forms, but vigorous, fertile, and probably also pathogenic forms of the glanders bacillus.

A few months later Carpano published some further observations of these thread-like forms (*La Clinica Veterinaria*, 1913). He found that, after growing upon suitable media for from 20 to 30 days, or in rare cases for a shorter period, they generated spores. The spores had the aspect of Chlamydospores; and on this account Carpano is inclined to class the glanders bacillus among the hyphomycetes. At first the spores appear in small numbers; but as the age of the cultures increases they become more abundant. They do not develop upon all culture media, and do not develop constantly upon the same medium. Suitable media for their development are weakly acid peptone-bouillon with 4% of glycerine, potato-peptone-bouillon, carrots with or without the addition of glycerine, and sometime also glycerine-agar.

The spores arise as spindle-shaped or oval swellings of the threads, gradually become rounded, and finally are set free by rupture of the threads. Their size is somewhat variable; the round forms have a diameter of from two to four microns, and the oval ones are from four to eight microns long and from two to four microns broad. As a rule a single thread forms only one spore, and this appears in the middle of the thread. The spores, in the fresh condition, show an external envelope and a refractile and generally granular interior.

The spores stain with Ziehl's Carbol.fuchsin, with Carbol. crystal violet, or still better with a diluted Giemsa solution (from 1 in 20 to 1 in 30) after previous fixing in a mixture of Potassium bichromate, sublimate, and glacial acetic acid. In the latter case the main portion of the spore contents stains violet like chromatin, and the remainder is lighter, more of a lilac shade, and beset with numerous small round vacuoles.

Carpano believes that sporulation can occur, not only in cultures, but also naturally, when diseased products escape from the animal body into the surroundings and find conditions favourable to the development of persistent forms of the bacillus. This theory would afford a simple explanation of certain cases recorded in the literature and often doubted, in which, despite the most stringent preventive, fresh cases of the disease have continued to reappear from time to time in infected stables.—(*Berliner Tier. Woch.*)

RUPTURE OF UTERUS IN A PREGNANT COW.

Paul Wigand, of Schwarmstedt, has reported the following unusual case. The subject was a very

well formed and well nourished cow, about seven years old. Wigand was call to her because, though previously quite well and vigorous, she had suddenly shown symptoms of intestinal impaction and tympany.

He found her standing quietly in the stall, with her back slightly arched and her head sunken, but paying plenty of attention to her surroundings. The abdomen was very tympanitic. From time to time the cow paddled with her hind feet, without, however, moving from the place where she stood. The whole surface of the body, especially on the back, ears and horns, was remarkably cool. The skin on the sides of the thorax was soft and elastic, and the hair was smooth. The eyeballs were somewhat retracted into their sockets. The mucous membranes were a pale yellowish-rosy colour. There was some lachrymation from the inner corners of the eyes. The pulse was weak, regular, and uniform, and counted 104 per minute; the artery appeared hard. The sounds of the heart were clear and weak. The respirations were superficial and regular, and counted 49 per minute. Coughing was not observed, and could not even be induced artificially. Clear thin streams of mucus were hanging from the corners of the mouth. The muzzle was cool and exceedingly moist. Appetite, rumination, eructation, and peristalsis of the rumen and intestines were all completely suspended. The tympany of the rumen was causing an upper and lateral bulging of the left flank. The anus was firmly closed. The vulva was small and shrivelled. The vaginal mucous membrane was a pale yellowish-rosy colour, and was almost dry. Both the pelvic ligaments were tense and firm. The tail was slightly lifted and held about two fingers breadth away from the anus and vulva. The udder was soft and flaccid, and its lymphatic glands were not enlarged. Some apparently normal milk could be drawn from each teat. The cow was due to calve in six weeks; and the history was that she had been milked three times daily up to the present, and had been accustomed to give about two litres (= about 3½ pints) of excellent milk at each milking, but had given none at all that day. Palpation of the right wall of the abdomen revealed the presence of a foetus; but this could only be felt at one limited point deep down in the abdomen and about 4-4½ inches in front of the stifle joint.

Rectal examination, which was very difficult on account of the tympany, resulted as follows. The rectum was quite empty, save for a little stringy and very sticky mucus. The bladder was quite empty and firmly contracted. The neck of the uterus and the anterior portion of the vagina were drawn forwards and downwards. Only the right horn of the uterus was accessible to the hand; and this lay very high up, to the right of the vertebral column. It had—so far as could be estimated by palpation per rectum—a length of from 20 to 24 inches and a thickness of about eight inches. Its consistence was almost like that of a moderately tense muscle. The whole surface of the organ was covered with superficial wrinkled folds. The cotyledons were strongly developed,

but could only be felt indistinctly on account of the contraction of the horn. No trace of fluctuation was present, and no parts of the foetus could be felt in the horn. The horn was easily movable in the abdominal cavity when pushed upon through the rectum. In short, the right horn showed all the characters which a normal uterus, after parturition but before the expulsion of the membranes, presents to rectal examination.

The left horn lay much deeper than the right, and was so much pushed downwards and covered by the tympanitic rumen that it could not be reached from the rectum.

Wigand now again palpated the right abdominal wall, and felt the foetus very distinctly in the same place as before. He then made a vaginal examination, which showed that the os uteri was closed. Finally, he again examined per rectum, this time introducing his arm up to the shoulder. He then, with tips of his fingers, reached a place far forwards and somewhat to one side, where four or five cotyledons almost the size of goose's eggs could be felt very distinctly indeed directly under the wall of the rectum. These cotyledons seemed to be protruding from a slit-like opening running in a longitudinal direction in the womb. The opening itself was not palpable; apparently it had so far closed that the pedicles of the cotyledons were compressed by the edges of the opening.

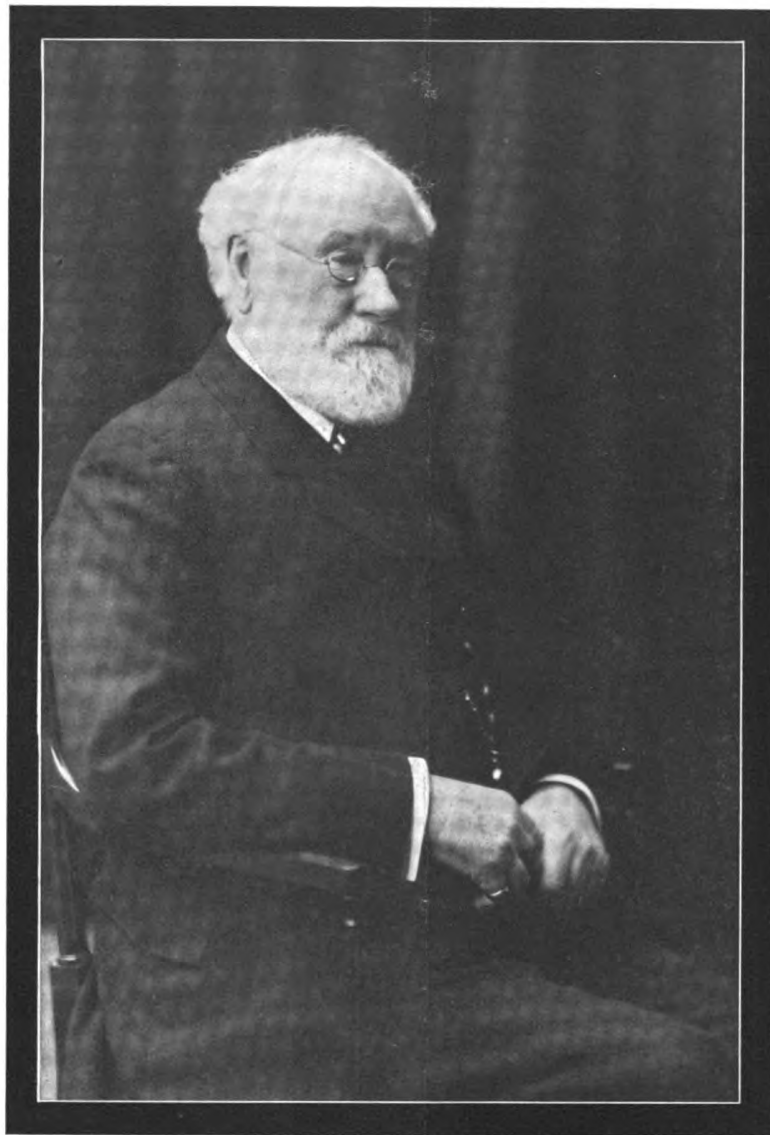
Wigand advised speedy slaughter; but, as that could not be carried out at once, and as the chief immediate difficulty appeared to be the tympany, he adopted symptomatic treatment for the time being. This consisted of a mixture of Acid hydrochlor. and Tinct. veratr. alb. administered every three hours. To his surprise this was followed by great apparent improvement. The next day the tympany had disappeared, and defecation, appetite, and rumination were re-established. The cow continued to be quite lively for several days, till, five days after the first examination, she showed labour pains, and Wigand was again called.

To his great surprise he found two long "water-bags" hanging from the vulva. The vulva was small and remained wrinkled, the pelvic ligaments were only very slightly relaxed, but the udder showed considerable oedema. Vaginal exploration revealed a normally presented calf, which was very easily drawn away. It was dead, but quite fresh, as if it had died during parturition. It weighed 34 pounds.

Wigand now again palpated the right abdominal wall, and could feel a foetus in exactly the same place as at the first examination.

Wigand then explored the uterus, finding the vagina rather narrow and the os uteri well opened. He easily ascertained that the foetus just extracted had lain in the *left* horn of the uterus. Exploring the right horn, he found the previously mentioned opening in its wall well forwards and somewhat to one side. He could pass four fingers through the opening, and could touch a part of the foetus—probably the hock joint—with his finger-tips.

The condition of the cow was now very bad. The skin was very cool, the eyes were deeply sunken,



James McCall

PRESIDENT ROYAL COLLEGE OF VETERINARY SURGEONS 1890-91.
FOUNDER AND PRINCIPAL GLASGOW VETERINARY COLLEGE.

and the pulse was weak and counted 140 per minute. The respirations counted 38 per minute, and were seriously altered in character. A hasty inspiration was followed by a short pause, and then by a jerky expiration accompanied by a slight groan.

Wigand advised immediate slaughter. Some hours later he carried out a post-mortem examinations, which resulted as follows:—

The dead foetus lying in the abdominal cavity was quite fresh. Its hair and claws were firmly attached, and there was no trace of putrefactive emphysema. It weighed 47 pounds.

The examination of the abnormal opening through which the foetus had escaped from the right uterine horn yielded unexpected results. After the protruding cotyledons had been pressed back the opening presented itself as an elongated oval smooth-edged "window" of an average diameter of only four inches. There was no appearance of a rupture having taken place. The opening had much more the appearance of having been punched out and the edges of having been pared to uniform thinness from within and without. In the immediate neighbourhood of the opening the uterus was almost as thin as paper. In this region the muscular layer was completely absent, and the peritoneal covering seemed gradually to blend into the mucous membrane of the uterus. There was no trace of any bleeding having taken place. On the other hand there was a considerable grey-yellow and somewhat transparent fibrinous deposit upon the peritoneal covering of the right horn; and under this there was marked injection of the blood-vessels. The serous covering of the lower part of the right abdominal wall showed quite similar alterations. The fibrinous deposits were quite free from smell. All the other organs of the cow, especially the spleen, liver, kidneys, heart, and lymphatic glands, were quite free from any alterations which might suggest the passage of toxins into the blood-stream.

Wigand is convinced that the foetus had left the uterus some days before the cow first showed symptoms of illness. It had lain in the abdominal cavity as an aseptic foreign body; and might perhaps have remained there a long time without causing any noticeable reaction, if the condition had not been complicated by the twin pregnancy.

Wigand finally remarks that he has described this case as fully as possible, partly because he has only found brief mention of similar observations in the literature, and partly because the diagnosis of "extra-uterine pregnancy" during life has generally been held to be impossible.—(*Berliner Tier. Woch.*)

A PATHOGENIC BACILLUS SUBTILIS.

Leitz has recorded that he isolated from a young Chinese patient, who was suffering from severe diarrhoea, a *Bacillus subtilis*, which was also pathogenic to animals (*Zentralbl. f. Bakt. u.s.w.*). Morphologically, the bacillus greatly resembled the anthrax bacillus; and its cultures also, at first sight, gave the impression of being anthrax colonies. The bacterium was weakly motile, showed no membrane

formation in bouillon, and only liquified gelatine very slowly. The sterile filtrate of its bouillon culture, when injected into guinea pigs in large doses, was toxic.—(*Berliner Tier. Woch.*)

W. R. C.

REPORT OF THE CHIEF VETERINARY SURGEON, SOUTHERN RHODESIA, FOR THE YEAR 1914. [Abridged].

"As in previous years, it has to be again recorded that the most important work of the Veterinary Department was in connection with African Coast Fever. Whilst the scientific knowledge of the nature of this disease has not been added to greatly during the year, the accumulation of practical knowledge year by year gives greater confidence and hope of its eventual eradication from Southern Rhodesia. Two points in connection with this disease as it occurs in this Territory remain to be solved:—(1) The occurrence of a single case of the disease in a herd of cattle, and (2) the recrudescence of the disease on old centres of infection, in some cases several years afterwards. A solution of these occurrences would considerably help to expedite the eradication of this disease.

During the year six outbreaks occurred. It is doubtful if three of these were recrudescences or extensions from existing outbreaks. The mortality for the year is 199 animals. If we compare these figures with the number of outbreaks and deaths that have occurred in previous years, the impression obtained is that little or no progress has been made in eradication since last year. So far as the actual figures go, this is correct, but when one considers the extent of the infected area at the present time compared with its extent last year, shows that considerable progress has been made.

Dipping Tanks and Dipping. So much has been said in the past upon the value of regular dipping of cattle, not only as a safeguard against African Coast Fever, as a means of eradicating it when once it has obtained a foothold in a herd, but also as a sound economic farming proposition, the principal of which is accepted by all progressive stockowners throughout the Territory, that at the present time it is unnecessary to elaborate these points. It is satisfactory to be able to record a steady increase in the number of cattle dipping tanks. The number now in use throughout the Territory exceeds 430. The compulsory dipping of all cattle in the area around Bulawayo, proclaimed under Government Notice No. 352 of 1913, has been continued, and, all circumstances considered, works very smoothly and well. Several stockowners outside this area desire to see its boundaries enlarged so as to include their properties.

Piroplasmiasis or redwater, and *Anaplasmosis* or gallsickness, still claim a certain percentage of deaths, but these principally take place where ticks are numerous, and chiefly in cattle imported from overseas and the Union of South Africa, in cattle bred in Rhodesia that have been regularly dipped and moved to such a place, and in locally-bred graded cattle. The experience of the District Veterinary Surgeon, Bulawayo, as set out in his report for the year in the following words, is interesting:—"Those people who imported stock from overseas have found dipping most satisfactory in combating the mortality from natural infection of redwater and gallsickness. Amongst all the animals imported and treated in this manner there has occurred only one death, and this was due to drinking dip."

During the year all cattle imported from overseas were subjected to the tuberculin test. The test was also applied to certain other animals imported from the Union of South Africa. In all, 288 animals were tested,

with the result that ten were destroyed, two of which were animals that were found to be suffering from the disease at the end of the previous year, and eight were heifers (in one herd) that were originally imported from the Union of South Africa.

In October contagious abortion was discovered for the first time in Southern Rhodesia, the subjects being some cattle that had recently been imported from Northern Rhodesia, and were still in quarantine near Sipolilo, in the Lomagundi district. Soon after, another centre of infection was found to exist in the Marandellas district. This apparently was quite separate, and had no connection with the Sipolilo outbreak. On tracing it up, two other centres were found to exist in this district. Samples of blood from the infected cows were forwarded to Sir John M'Fadyean, R.V. Coll., London, who confirmed the Gov. Vety Bacteriologist's diagnosis, and stated that he had no doubt we were actually dealing with the contagious abortion of cattle which is common in England. So far as our present experience of it goes, the disease appears to be less virulent than it is in England, in that a smaller percentage of animals in the herd abort. Whether it will also yield easier to measures of eradication remains to be seen.

The Territory remains free from glanders. During the year 681 horses, 231 mules, 1743 donkeys were tested with mallein on importation. It is a pleasure to be able to record that no reactions to the test occurred, showing that the adjoining territories are gradually eradicating the disease.

Rinderpest. During the first half of the year this disease had not spread in a southerly direction. The authorities in German East Africa were apparently holding it in check north of the Ruaha River up to the outbreak of the war, since when, of course, no information as to its progress in that territory has been obtainable. The Governments of Nyasaland and Northern Rhodesia are taking all possible precautions on their borders to prevent its entry into their territories from German East Africa. Veterinary surgeons are stationed on that border, and the Government of Southern Rhodesia is immediately informed by telegraph, through His Excellency the High Commissioner, of any matters of importance which occur there. The recommendation of the Veterinary Conference, held in Bulawayo in April, 1912, that the Government of Southern Rhodesia should obtain and establish a reserve of 50,000 doses of rinderpest serum was given early effect to, and this material has been on hand for several months past. During the year Mr. L. E. W. Bevan, Veterinary Bacteriologist, visited British East Africa to enquire into the methods practised in the territory in combating the disease, and we are much indebted to the officials of that Administration for the generous assistance given him.

Trypanosomiasis. Owing to the constant spreading out of civilisation into the uninhabited country, this disease is more frequently met with, and is becoming yearly of more importance. Many oxen used in the opening up of areas for mining purposes have been affected, and would no doubt have died if the Government Veterinary Bacteriologist had not discovered a treatment enabling such animals to recover and continue their useful work. Other animals and man have also been infected, and the general impression is that the tsetse fly areas, as a whole, have extended.

No cases of anthrax, lungsickness (contagious pleuropneumonia of bovines), black quarter or quarter evil, or rabies have occurred during the year.

When the extent of the Territory is considered with the present necessity of importing numbers of animals to fill up the vacant places therein, the comparatively small amount of infective disease amongst animals must be considered as satisfactory.

Scab in Sheep and Goats. In years past, for various reasons, these diseases have received scant attention, but owing to the increasing importance of the small stock industry, and at the request of breeders, an attempt was made to get all outbreaks reported and eradicated as far as possible with the present staff. The disease has been found to be not very prevalent, not nearly so prevalent as it was generally supposed to be, and with the exception of advanced cases of goat scab, readily yields to treatment.

Gall-lamziekte. Great uneasiness was manifested in various districts lest the disease known as gall-lamziekte should be introduced by cattle from the south. In the early part of the year the Chief Veterinary Surgeon visited the Transvaal and Cape Province, with the object chiefly of making enquiry into the disease. The greatest courtesy and every assistance were extended to him by Sir Arnold Theiler, Director of Veterinary Research, and Mr. C. E. Gray, the Principal Veterinary Officer of the Union. A number of farms in Bechuanaland where the disease existed were visited, and a number of cases examined. It is sufficient to say that his investigations and enquiries strengthened the view previously advanced, viz., that if it were a disease capable of being introduced by cattle it would have appeared in Rhodesia years ago. It is suggested by the most recent investigator that the disease is caused by sarcosporidia, and in this connection I merely wish to record that these parasites have been found in animals from widely different areas in Southern Rhodesia.

Importation of Cattle from Texas. Whilst on vacation leave, the Chief Veterinary Surgeon was deputed to visit Texas for the purpose of enquiring into the health of cattle in that State, with a view to the importation of breeding stock if conditions proved satisfactory. He states in his report that 'There is, in his opinion, no disease of cattle in Texas which, ordinary precautions, is likely to be imported into Rhodesia by the transfer of Texan cattle.'

STAFF.—The appointment of Mr. Jos. Buck, M.R.C.V.S., as Veterinary Inspector at Kimberley for the purpose of examining cattle *en route* to this Territory, is confidently expected to result in a stricter adherence to the conditions of our importation regulations than has previously obtained in some instances, and also to ensure, as far as it is possible to do so, the good health of our importations. On 1st July the Chief Veterinary Surgeon proceeded on vacation leave, and was appointed as delegate for Rhodesia to the International Veterinary Congress which was to have been held in London in August.

During his absence his office was ably filled by Mr. C. R. Edmonds, Assistant Chief Veterinary Surgeon, who has written the major part of this report. The number of Veterinary Officers was reduced by the termination of the agreement of Mr. D. R. Chatterley, who, I regret to say, died *en route* to Capetown. Mr. Chatterley was an able and efficient officer, and a distinct loss to the Department. Mr. H. C. Lowry, who was on the reserve of officers, Army Veterinary Corps, was recalled by the War Office for military duty. Mr. B. Myhill was granted leave of absence for the purpose of proceeding on duty with the Union of South Africa Forces. Early effort was made to fill the vacancies in the staff, but without success, owing to the dearth of qualified veterinary surgeons in England.

IMPORTATION OF STOCK:—From Great Britain—Horses 2, bulls 42, heifers 39; from Union of South Africa—Bulls 461, heifers 4950; from Portuguese East Africa—Slaughter cattle 96; from Northern Rhodesia—Via Feira—Oxen 694, cows 676, calves 301; via Victoria Falls—Cows 50, oxen 1356. Other importations from the South—Horses 665, mules 193, donkeys 1307, sheep and goats 52,508, ostriches 96, pigs 131.

J. M. SINCLAIR,
Chief Veterinary Surgeon."

PARLIAMENTARY.

In the House of Commons on Wednesday, 3rd Nov.

FOOT AND MOUTH DISEASE.

Mr. Acland (In reply to a question): Since Tuesday morning a fresh outbreak has been confirmed in the vicinity of Bristol, and nothing can at present be traced to connect it with those in the neighbourhood of Monkton Combe. Another outbreak has also been confirmed in the neighbourhood of Limply Stoke, which may be considered as one of the Monkton Combe series. The total number of outbreaks in the Bath district amounts, therefore, to twenty-five; and the total number of outbreaks altogether to twenty-six. The scheduled district embraces an area of approximately fifteen miles around Monkton Combe, and includes a large portion of Wiltshire, and practically the whole of the city of Bristol. The whole of the outbreaks in the Bath district have occurred within the scheduled district, and in that portion of it in which the movement of animals has been entirely prohibited since the 21st ult. The steps taken to prevent the spread of infection include the prohibition of movement of animals within the scheduled district and the slaughter at the earliest possible moment of all animals affected with the disease and those which have been in close association with them. Circumstances have prevented the slaughter being carried out in the Bath district as rapidly as usual on account of a complete dearth of butchers and of the labour required in connection with the disposal of the carcasses of slaughtered animals. The military authorities have now come to the Board's assistance in the matter. Masters of Foxhounds and Hunts affected have been requested by the Board to avoid hunting in any portion of the scheduled district so long as the movement of animals therein is entirely prohibited.

Thursday, 4th November.

Mr. Field asked the Parliamentary Secretary of the Board of Agriculture whether he could state about what period of time elapsed from the outbreak of foot-and-mouth distemper until it was reported; whether any measures were being taken to prevent a repetition of such secrecy; and whether similar precautionary arrangements of prohibiting movement of live stock from within a large area, as practised in Ireland formerly, would be resorted to in this case?

Mr. Acland: I am advised by the chief veterinary officer of the Board that about a fortnight elapsed between the definite outbreak of disease and the day on which it was reported. There is no evidence to show that any of the owners whose stock were affected knowingly concealed the existence of disease, an offence which would render them liable upon conviction to a substantial penalty. There must have been ignorance on the part of the owners and of those who attended the sick animals, but it is difficult to take measures which will entirely prevent people being ignorant of that which they ought to know. In reply to the last part of the hon. member's question, I would point out that the precautionary arrangements adopted in this country are similar to, but not identical with, those practised in Ireland. They are, I believe, adequate under the conditions which prevail here and are being rigorously carried out.

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donation is reported:—

Messrs. Geo. Thatcher & Son, London	£1	1	0
Previously reported	51	6	0
Total	£52	7	0

Foot-and-Mouth—Symptoms and Spread.

A leaflet has been issued (No. 292 of the Board of Agriculture and Fisheries) and should prove useful, especially as the malady spreads so rapidly, and a knowledge of its symptoms, the subjects that may be affected, the nature of the infection and its carriers, is important to stock-owners, medical men, and veterinary surgeons. All the domestic animals and ruminants may be infected with foot-and-mouth disease. Human beings may contract the complaint, though they are not the most susceptible class. Cattle are the most susceptible, then come sheep, pigs, and goats, and afterwards horses, dogs, and cats. All suspected outbreaks of the disease are to be reported immediately to the authorities. The filtrable virus to which the disease is due produces its effects usually within 48 to 72 hours, but the incubation period may exceptionally extend to ten days. A high temperature—105° F. in cattle, lameness, slaving at the mouth, and smacking of the lips are present. Lameness in a number of animals, especially if noticeable in more than one species—cattle, pigs, or sheep for example—should arouse the gravest suspicion. The lameness may escape the casual observer, as the animals may be so footsore as to remain lying down. Slaving is not so noticeable in pigs and sheep as in cattle. The lesions consist of vesicles appearing about the mouth and on the finer parts of the skin and about the feet at the junction of skin and hoof. In milk cows the milk yield falls considerably and the lesions may appear on the teats and cause permanent injury to the udder. Very young calves may die from enteritis.

The contents of the vesicles are infective, so also the blood in the early stages of the disease. The virus may be easily destroyed by antiseptics, but under certain conditions which exist in nature it may remain active for months and be carried long distances. Contact and cohabitation of the animals favour the spread of infection, and attendants, utensils, wind-blown saliva, foodstuffs, and water-supply may all act as spreaders of the epidemic. Roads along which affected animals have passed and wagons in which they have travelled may remain infective for some time. Rats, fowls, birds, cats, horses, and dogs may act as carriers of the virus: human beings may possibly convey the disease to animals. The spread of infection is very insidious. A good deal of evidence has been collected which goes to show that a human being may, through his clothes, make the clothes of others infective. Animals which have recovered may be harbourers of infection for a considerable time. The commonest method of infection is through the mucous membranes by way of the alimentary canal; 1/250th of a drop of fluid from the vesicles is sufficient to cause infection. Personal hygiene and disinfection, control of attendants on outbreaks, confining the milk supply to the infected place and boiling it before giving it to other animals, are measures of prevention advocated.

Great loss in stock and money and long periods of prevalence of the disease may result from inability to isolate and stamp out the disease by reason of lack of immediate notification.

A Commission has been appointed by the Governor of Indiana to investigate the causes and means of prevention of mental deficiency in that State. We learn from the *New York Medical Record* that a report recently published by the American Eugenic Society recommends the sterilization of an increasing number of defectives each year until the number reaches about half-a-million. It is estimated that if this recommendation were carried out the propagation of the mentally unfit in the United States would be practically at an end.

The Slaughter of Animals.

At the last meeting of the Bristol Health Committee a considerable discussion place upon the question as to the old methods of killing beasts and pigs being superseded by the "humane killer" and the "captive bolt." Eventually it was decided by a large majority of the members that the methods adopted in the slaughter-houses should be optional, and another resolution was also passed that no permission should be given to constables or the officers of the Royal Society for the prevention of cruelty to Animals to attend at the slaughter-houses.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Nov. 4.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieuts. to be temp. Captains:—A. F. Dykes, dated Sept. 8. J. Millward, C. H. Butcher, F. R. Adams (Oct. 23.) J. Blackburn (Oct. 24.)

Temp. Lieut. J. Sherley relinquishes his commission, dated Oct. 22.

Nov. 5.

To be temp. Qmr. with hon. rank of Lieut.:—E. H. Morton, dated Nov. 6.

Nov. 6.

Temp. Lieut. to be temp. Capt.:—S. R. Tufts, dated Oct. 8.

Nov. 9.

Vet. Major W. A. Pallin, F.R.C.V.S., from R.H. Gds., to be Major, dated Nov. 10.

Lt. R. T. Smith, from S.R., to be Lieut., dated Nov. 10.

Temp. Lieuts. to be temp. Capts.:—W. Brown, dated Oct. 10. T. G. S. Bogue (Oct. 29.)

Temp. Lieut. J. W. Reynolds relinquishes his commn., dated Oct. 28.

Nov. 10.

To be temp. Lieut.:—J. R. Idle, dated Oct. 25. A. E. Brandon (Oct. 26.) L. Barnard (Oct. 27.)

Nov. 11.

To be temp. Lieut.:—H. Tweedy, dated Oct. 16.

Temp. Qmr. and Hon. Lieut. J. W. Higgins, from A.S.C., to be temp. Qmr., dated Nov. 12.

To be temp. Qmr. with hon. rank of Lieut.:—F. Cranfield, dated Nov. 12.

Nov. 9.

R.H. Gds.—Lieut. R. T. Smith, from A.V.C., to be Vet. Lieut., dated Nov. 10.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Nov. 8.

To be temp. Major:—Capt. P. W. Dayer-Smith, dated Oct. 11.

The date of appmnt of Lieut. E. Child is Sept. 27, and not as stated in *Gazette* of Oct. 4.

To be Lieut.:—F. W. Somers, dated Sept. 27.

The A.V.C. Comforts Fund.

Strathyre, Parsifal Road,
Hampstead.

Dear Sir,—I have pleasure in enclosing you further lists of kind contributions for favour of publication in your next issue. I am also enclosing particulars of the Concert-Matinee to be held at the Savoy Theatre on Tuesday next, November 16th, at 2.30 p.m. (See advertisement columns.)

Owing to change of arrangements at St. James' Theatre the entertainment has been transferred, and I trust all those who have taken tickets for this performance, or who wish to do so, will accept this intimation.

Tickets for the Savoy performance will be issued from R.S.P.C.A. Office, 105 Jermyn Street, in exchange for those sent out for St. James'. Already the booking is very satisfactory, and we hope for a very full house.

Yours truly,

ADELAIDE M. MOORE.

List of Contributions to Nov. 10.

Major Alston Edgar, A.V.C. (St. Columb)			
Donation and result of Garden Fete	5	0	0
per Capt. Routledge (Bury St. Edmunds)			
Result of Athletic Sports, etc.	3	0	0
Miss Edwards (Neath)		10	0
Mr. H. B. Forsyth	1	1	0
Mr. Charles Sheather	5	0	0
per Mrs. Shipley—			
Dr. H. Wyllys	10	0	
Mrs. Worship	2	0	0
Mrs. F. Thurston		7	6
Miss G. J. Shipley	1	0	0
Mrs. Shipley, sen.	1	0	0
Mrs. Ryley	10	0	
Mrs. W. Wyllys	2	0	
Mrs. Auger	5	0	
Mrs. Santy	2	6	
Mrs. Waters	2	6	
Mrs. Holl	10	6	
Mrs. Barcham	1	0	0
Miss Cleveland	5	0	
Mr. Lark	1	0	0
Mrs. Buckingham	1	1	0
Capt. Arnold	2	0	
Mrs. T. Cook	2	6	
Mrs. Barr	5	0	
Mrs. Jack	10	0	
	10	15	6
Mr. G. Mayall		10	0
Major D. J. Barry, A.V.C.		1	1
Mr. T. Salusbury Price		5	0
	£31	17	6

Amount to May 29	£743	8	6
Sept. 18	12	2	0
Nov. 10	31	17	6

Parcels received from—Mrs. Quinlan, Mrs. Garnett (5), Mrs. Barber (Brewood), Mrs. Walker (Alton), Mrs. Scott (Leyton), Mrs. Nurse and Working Party, containing beautiful comforts as kindly knitted from wool supplied, and also extra gifts from friends, included: Miss Edwards, 5 mufflers, 2 pr. mittens; Mrs. Russell, 7 mufflers, 7 pr. mittens; Mrs. Mettam and Irish

friends, 5 pr. mittens, 22 pr. socks, 8 helmets, 5 body belts, 15 mufflers, writing pads. Mrs. Fernside, 400 cigarettes, box of pels. of comforts; Mrs. John Perry (Cardiff), Packs of cards; Mrs. Latta (Ulverston), books, 3 pr. socks.

The New Buildings of the Royal (Dick) College.

The memorial stone of the new buildings was laid in July, 1914, by the Marquis of Linlithgow. Within the last few days the hoarding round the building has been removed, and a full view of the front and side elevations is now possible.

Unfortunately, the war has given rise to formidable difficulties, for when war was declared the subscription list was brought to a standstill: labour and materials have also increased in cost, with the result that contracts now materially exceed in amount the probable cost as originally estimated.

In consequence of these financial difficulties, the Board of Management have reluctantly decided that much of the projected work will require to be left in an unfinished state in the meantime, and that only such work as is essential can be proceeded with. Attention is being confined to such laboratories and class rooms as are absolutely necessary in order that teaching work may be carried on. For the time being, provision for research will be greatly limited; and though the facilities for teaching will be better than in the old buildings, they will not be such as it was hoped to make them and as they will have to be made in the near future.

For the carrying out of even the imperfect scheme, it is found that a sum of approximately £12,000 is still needed. Though it is recognised that this in an unfortunate time at which to be forced to appeal to the public for assistance, the College Board consider that there is ample justification for such a proceeding. At no time in the history of this country has the importance of veterinary science been more apparent than it is at the present moment. In the interests of public health, and to conserve the agricultural wealth of the country, it is essential that a constant stream of veterinary surgeons, trained according to modern standards, should be furnished for civilian appointments and practice. The present war demonstrates the urgent need for more men in the Army Veterinary Corps. The authorities at the War Office have been compelled to appeal to the civilian practitioner, and the appeal has met with a response which threatens to thin the civilian ranks of the profession beyond the limits of efficiency.

The output of veterinary graduates must increase or the country will suffer. And the training of these graduates must be thorough.—*The Scottish Farmer.*

Hypertonic Saline Solution.

In a note on "The use of Hypertonic saline solution in gynaecology" in *The Lancet* of October 30, Mr. Clifford White, F.R.C.S. ENG., writes:—"The hygroscopic properties of glycerine tampons and pessaries have long been made use of in treating inflammatory conditions of the pelvis, but the use of strong saline solution as a vaginal douche has apparently not come into general use, and it is not mentioned in several text-books published during the present year. Since my return to England some months ago I have used a solution made of four drachms of sodium chloride and half a drachm of sodium citrate to each pint of water as a vaginal douche in all inflammatory and septic cases where a douche is required, and find their effect is better than that of the antiseptic douches previously employed. In sepsis (especially abortion cases), after clearing out the uterus and douching it with saline solution, it is useful

to leave a few tabloids of salt inside the uterine cavity to ensure that any organisms left there are flooded with the serum that is drawn in to dissolve the salt. The use of salt tabloids was, I believe first suggested by Mr. Beckwith Whitehouse in France.

For hospital out-patient use the powder is put up in the proportion of one ounce of salt to half a drachm of sodium citrate. This proportion of citrate is rather lower than usual, but quite high enough for the purpose, considering that the present price of citrate is about 5s. per pound. The powder, being bulky, is dispensed in paper bags labelled 'Two tablespoonfuls to two pints of water as directed.'

About 1905 the late Mr. Barnard advocated the use of brine enemata for abdominal cases, and since seeing his article at that time I have frequently ordered them and have always been satisfied with their effect. As a rule three to six drachms to the pint is strong enough and does not cause any pain."

Experiments on Living Animals.

By reason of the great stress of work thrown upon the Home Office owing to the war, it has not been possible to prepare the report on experiments performed in England and Scotland during the year 1914 in the usual detailed form under the Act 39 and 40 Vict., c. 77, but a summary report has been issued showing (Table I.) the names of all places registered for the performance of experiments during 1914; and (Tables II., III. and IV.) the names of all persons who have held licences during any part of the year, with the total number of experiments returned during 1914, classified and arranged according to their general nature. The total number of licensees was 678, of whom 188 performed no experiments, but in eight instances it has not been possible to obtain the necessary report owing to the absence of licensees on war service, and the total number of experiments was 87,253 (905 less than in 1913). Under Table II. (A) the total number of experiments (with anaesthetics) was 4889. These were experiments other than those of the nature of simple inoculations, hypodermic injections, or similar proceedings. Of these 4889 experiments there were performed under licence alone, 2772; under certificate C, 263; under certificate B, 1550; and under certificate B, plus EE, 304 experiments. Under Table II. (B) the total number of experiments (without anaesthetics) was 82,364. These were devoted entirely to inoculations, hypodermic injections, and some few other proceedings. Of these 82,364 experiments, 81,891 were performed under certificate A, 383 under A plus E, and 90 under A plus F.

Certificates are granted as follows:—A. Dispensing with the use of anaesthetics. B. Dispensing with the obligation to kill the animal before recovering from anaesthesia. C. Permitting experiments in illustration to lectures. D. For the further advancement of knowledge by testing previous discoveries. E (with A). Permitting experiments on cats or dogs without anaesthetics. EE (with B) Permitting experiments on cats and dogs and dispensing with obligation to kill the animal before recovering from anaesthesia. F. Permitting experiments on horses, mules, or asses.

The returns show that during the year 1914, 22,371 experiments were performed by 19 licensees in the course of cancer investigations; of these, 625 are in Table II. (A) and 21,746 in Table II. (B). The latter are almost entirely inoculations into mice. Ninety-four licensees report over 24,000 experiments which were performed for Government departments, county councils, municipal corporations, or other public health authorities. Twenty-one licensees report over 15,000 experiments for the preparation and testing of antitoxic sera and vaccines, and for the testing and standardising of drugs.

During the year the several registered places have been frequently visited by the inspectors and a large number of experiments have been witnessed. For the most part visits have been made without previous notice. The animals were found to be suitably lodged and well cared for, and the licensees generally attentive to the requirements of the Act and the conditions attached to their licences by the Secretary of State.

The Chief Inspector who makes the report to the Secretary of State for the Home Department is Mr. G. D. Thane. The Advisory Committee appointed by the Secretary of State to assist him with advice in the administration of the Act consists of: The Lord Moulton of Bank, Sir Anthony Bowlby, C.M.G., Sir John Rose Bradford, K.C.M.G., F.R.S., Sir H. Bryan Donkin, M.D., Sir George Henry Makins, K.C.M.G., C.B., Sir Seymour John Sharkey, and Mr. Charters J. Symonds.

Ireland is reported upon separately in Dr. Joseph O'Carroll's report to the Chief Secretary to the Lord Lieutenant of Ireland. The number of persons holding licences in Ireland at the end of 1914 was 30, an increase of five new licences. The physiological laboratory of University College, Galway, has been added to the list of registered places. The number of licensees who returned no experiments was 10. 340 experiments were performed by 20 licensees, 92 being under licence alone and 248 under certificate. 210 were simple inoculations under Certificate A, of which 86 were made for the investigation of diseases of the lower animals. In 132 cases the object of the research was physiological; in 198 the object was pathological, with either a diagnostic or therapeutic aim; and in eight cases the aim was medico-legal. Dr. O'Carroll says: "It occurs to me

me that where so many problems especially pertaining to the public health are being examined by earnest and well-qualified persons they might be invited to record in their annual reports a brief note of any results definitely acquired by them.—*The Lancet*.

In the House of Commons on October 20th, Mr. Greenwood asked why the names of those licensed experimenters on living animals who had committed a breach of the law in the course of such experiments were suppressed in the returns relating to such experiments. Sir John Simon said that if the offence were serious and a prosecution followed, the name would, of course, become public; but it had never been the practice to publish the names of persons guilty of technical offences or the omission of formalities which could be adequately dealt with by reprimand. He did not think any useful purpose would be served by altering the rule. The Royal Commission discussed the point in their report, but made no recommendation in favour of publication.

An expensive Cattle Medicine.

At the last meeting of the Devon County Council it was stated that a sample of a much advertised cattle medicine was on analysis found to consist of a coloured dilute solution of ammonia, the value of the contents of a bottle, sold for 2s., being one-twentieth of a penny. Several members wished to have more information about this concoction, but it appeared that the committee had been advised not to give names. The report of the analysis is in the County Council offices, and any member of the Council can peruse it.—*The Lancet*, Oct. 9.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended November 6	17	17	10	101			11	20	3	68	238
Corresponding week in											
1914 ...	11	11			2	4	†	†	6	88	540
1913 ...	17	17			3	3	20	55	6	50	364
1912 ...	9	9			4	4	27	32	9	56	732
Total for 45 weeks, 1915 ...	494	560	31	216	41	74	||713	||1529	169	3518	15175
Corresponding period in											
1914 ...	631	690	24	124	88	269	†1530	†2642	165	3770	36048
1913 ...	475	524		133	325	2123	4213	154	2160	28014	
1912 ...	659	741	92	639	158	292	2529	5349	217	2584	35109

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked; ‡

Board of Agriculture and Fisheries, Nov. 9, 1915

|| Figures for thirty-two weeks only.

IRELAND.		Week ended Nov. 6		Outbreaks		9		1		16	
	
		1914 ...	...	...	...	...	1	6	2	16	
		1913 ...	...	...	...	...	1	7	...	7	
		1912 ...	...	2	8	...	1	14	2	7	
		Total for 45 weeks, 1915 ...	1	1	...	1	3	65	355	220	1272
		Corresponding period in									
		1914 ...	1	1	76	957	...	72	440	180	896
		1913 ...	...	...	...	...	1	111	436	126	829
		1912 ...	3	3	68	382	...	58	304	200	1610

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Nov. 8, 1915
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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ARMY PRACTICE.

During the whole of the present year, a comparatively large proportion of our clinical contributions have come from the Army. This was only to be expected, considering the number of our members now in the forces; and a great deal more might well come from the same source. As we pointed out some months ago, our graduates in the army are enjoying exceptional opportunities for clinical observation and experience—opportunities upon a scale which, to some of them, has never been present before and never will be again. Much of their experience will be of great value to those of them who return to civil life; and much of it, therefore, directly interests the civil practitioner.

There are branches of military veterinary work which are peculiar to the army. But a great deal of the army veterinary surgeon's practice consists in the treatment of cases quite similar to those met with in civil life, with certain important differences in the conditions of treatment. We need not dwell upon those differences; but it is obvious that many of them—such as amplitude of skilled assistance, availability of proper accommodation and apparatus, and opportunities of frequent examinations of the case—are all in favour of the veterinary surgeon. They greatly facilitate treatment; and they are equally advantageous for study and observation.

Perhaps the most important of all army veterinary work—and its importance and its difficulties alike are greatly augmented in war time—is the prevention of contagious disease. Some civilians who joined the army had already had considerable experience of this; others, though experienced enough in other respects, had had little to do with the preservation of large studs from infection. Opportunities for work along this line have diminished considerably in civil practice of late years; but in the army they have never been so great as to-day. Here again we have a field of army work which directly interests civil practitioners.

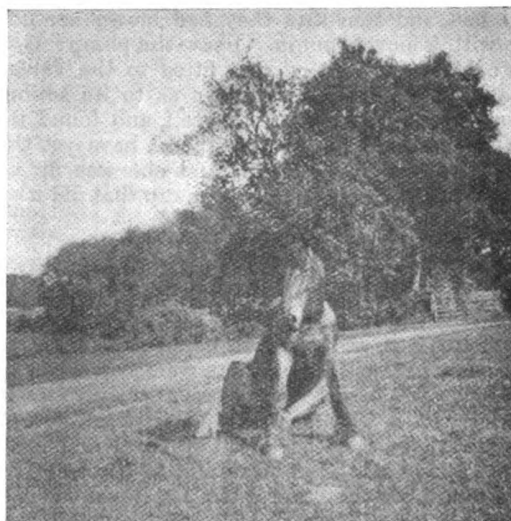
Two other points may be noted. Apart altogether from wounds sustained in warfare, there is much more veterinary work to be done amongst army horses in war time than in peace—more accidents, more lameness, and more illness of every kind. Secondly, the military system of keeping records renders it easy to follow the history of a case, and equally easy to report upon it. Altogether, our members in the Army are now enjoying golden opportunities of professional observation. A very little of their experience is being published, and much more ought to be.

LOW RINGBONE.

I am enclosing a couple of snapshots of a cart mare suffering from acute pain from what was diagnosed as low ringbone. In this position she would sit for hours. She had been in this condition for two months before I was asked to see her. I snapshotted her, and she was shot in another manner the next day.

WALTER WESTERN.

Studland House, Bracknell, Nov. 11.



PERVIOUS URACHUS IN FOALS.

I have had over twenty years experience in a district where all kinds of foals are bred, and have seen lots of pervious urachus and joint evil. In pervious urachus I cast the foal, turn it up on its back, and inject about two drachms of Tinct. iod. forcibly into the urachus. I then get a needle and silk, pass the needle through the skin surrounding urachus as a ligament. I then keep plenty of Boric powder made with flour dusted on, and allow the whole lot to slough off. I then inject the foal with *Staphylococcus albus*, *citrus*, *aureus*, (P.D.), 100 million, and they go on all right. Have found the latter very useful in joint evil.

BICYCLE PUMP IN MILK FEVER.

When in an Oxfordshire village last week was called to see a cow with milk fever, which she had in a well developed form. I asked what treatment she had, and they said they had blown her udder up with a bicycle pump. I saw the pump: it was an ordinary pump, and was fitted to the valve of the inner tube. Being curious as to its action, I blew up the udder with it myself, and found it to be the best and quickest method I have yet tried. We gave the cow a drench, and she was up next morning. I think it was the pump that did it.

A DIFFICULT CALVING.

On Thursday last was called to a cow calving, and found two fore legs and head presented in apparently normal condition. They fixed ropes to head and legs, and six men could not get it away. On examination I found there were two calves presented: No. 1 with head presented and fore legs back; No. 2 with head turned back and fore legs presented, so that the head of No. 1 and legs of No. 2 appeared as if belonging to the same calf. We pulled out the head of No. 1 calf and cut it off; next I removed both fore legs of No. 2 calf at the shoulders. This allowed me to get head of No. 2 forward and deliver the calf. I then got the legs of No. 1, which were flexed at the knees, and delivered the calf. With the exception of retaining the foetal membranes for two days the cow did well.

J. H. PARKER.

Faringdon, Berks.

ABSTRACTS FROM FOREIGN JOURNALS.

THE USE OF LECLAINCHE AND VALLÉE'S SERUM IN INJECTION ABSCESSSES.

Sometimes, though certainly very rarely, the administration of copious subcutaneous injections of from 200 c.c. to 300 c.c. is followed by the development of voluminous abscesses at the site of injection. When punctured, these abscesses give exit to a grey-white or yellow-white thin fluid pus, which contains different kinds of bacteria. If treated by the ordinary antiseptic measures, they heal very slowly.

Ramon, working at the Pasteur Institute in Paris, has been using the serum which Leclainche and Vallée prepared against pus cocci and coli bacilli for these abscesses, and has obtained excellent results. He has published the method he adopts (*Bullet. de la Soc. Cent. Méd. Vet.*, 1913). He incises the abscess, washes the cavity out with boiled water, and then injects from 30 c.c. to 40 c.c. of the serum into it. He then holds a pad of wadding over the opening for about five minutes, and meanwhile massages the walls of the abscess, so as to ensure that the serum penetrates the cavity as thoroughly as possible.

In horses with these abscesses, when treatment by the ordinary antiseptic means is adopted, the suppuration first of all increases, and then persists for some days. When the serum is used, however, the suppuration ceases very quickly, and the subsequent healing proceeds rapidly.

The effect of the serum depends on the influence of the antibodies contained in it.—(*Berliner Tier Woch.*)

HUMAN AND CANINE LEISHMANIASIS IN RUSSIAN TURKESTAN.

W. L. Yakimoff has published an article on this question (*Bull. Soc. Path. Exot.*, 1915, July. Vol. 8, No. 7. Pp. 474-503).

The author finds that in Turkestan there appears to be some connection between the number of cases occurring in the dog and in man in the various districts, the percentage of cases in the two species bearing a more or less constant relation to each other.

Of twelve cases of the disease in children in which the author was especially interested seven were in close contact with dogs, one with a cat, in one dogs were in the neighbourhood of the child, but there was no actual contact, and in three there were no dogs in the house.

In smears of the intestinal contents of a flea caught on the cat the author has found organisms in the post-flagellate phase similar to those noted by Basile, Sangiorgi, and others, and in *Ctenocephalus canis* he has found parasites indistinguishable from leishmania.

The parasite occurring in Turkestan is indistinguishable from the Indian and Mediterranean parasites, and, like those, it may be either free or enclosed in cells of various kinds. On one occasion in a child the author found a leishmania in a red corpuscle.

An observation made in 1912 on material obtained from Tunis, but not published, has been confirmed in Turkestan, namely, that forms suggesting, if not representing, schizogony may be found both free and enclosed in cells, in smears made from the spleen in severe cases.

The author has been able to infect mice from children, and to infect dogs and cats from such mice.

With regard to the question as to the identity or otherwise of the disease caused by parasites of this genus in the various countries, the opinion is expressed that they are all identical, and that the dis-

eases of man and the dog are also the same. In consequence of this dogs may play an important part in the transmission of the disease, and contact with dogs is always a source of danger to man.

Material has been obtained from about 1000 dogs, and examination shows that practically 24 per cent. are infected, and it appears to be established that the disease in dogs shows a seasonal variation, the number of fresh infections increasing during the early part of the summer.

An account is given of the clinical characteristics of the disease in dogs, but the author expresses the view that in the majority of cases no special symptoms are seen. It was found experimentally that the disease may last for three years or more.

The most constant lesions were enlargement of the spleen and red coloration of the bone marrow, but both of these lesions are not observed in every case, and enlargement of the spleen alone is not very significant.—(*Tropical Vet. Bulletin*).

THE PERIOD OF INCUBATION IN ANIMALS INFECTED WITH LEISHMANIA.

W. L. Yakimoff publishes a contribution to this question (*Bull. Soc. Path. Exot.*, 1915, July. Vol. 8, No. 7. Pp. 430-431). Summarising briefly the statements published by various observers, the author shows that in dogs the period of incubation after experimental infection is generally about 12 days, and that in mice the period may be very short.

A dog of about two months old was inoculated intraperitoneally with an emulsion of the organs of another dog which had been infected with a human strain of the parasite which had been used to infect mice successfully. The material used was very rich in parasites. On the third day the dog died. The serous membrane of the small intestine was very congested, and parasites were found in small numbers in smears from the liver and the spleen. The bone marrow appeared to be free from parasites.

It is suggested that the short period of incubation in this case may have depended to some extent upon the number of parasites injected, the age of the animal inoculated, and the origin of the virus.—(*Tropical Vet. Bulletin*).

W. R. C.

REPORT OF THE VETERINARY BACTERIOLOGIST, SOUTHERN RHODESIA, FOR THE YEAR 1914. [Abridged.]

"The routine work of the laboratory has considerably increased during the year. In addition to the examination of a greater number of smears than in previous years, the application of the agglutination test for the detection of contagious abortion, the recognition of parasites and morbid specimens, and the recording of observations in connection with animals suffering from trypanosomiasis and anaplasmosis, have added to the work of the staff. Some experiments have been carried out in connection with the insect and tick transmission of diseases. This is a very important branch of veterinary research, for which fly-proof accommodation is urgently needed. Material from six cases suspected to be suffering from rabies has been tested and proved negative.

East Coast Fever. The number of preparations sent for diagnosis has been less than in previous years, probably as the result of the recent methods of combating the disease by systematic dipping. The very puzzling features occurring in connection with the incidence of this disease, and the unusual symptoms presented by animals in herds regularly dipped render a laboratory investigation desirable.

The Plasmoses of Cattle have continued to cause enormous losses to stockowners through the serious shortage of bulls, the heavy mortality of young animals, more especially of grade stock, and the anæmia and consequent loss of size, vigour and maturity in all bovine animals directly or indirectly due to these diseases. The indigenous cattle of the country, while comparatively resistant to the plasmoses, are small and slow to mature, and these defects can only be remedied by mating with bulls of improved types. It has been estimated by the Chief of the Animal Industries Branch that at the present time 500 stud bulls are urgently required for this purpose. But the mortality of cattle introduced from overseas for this purpose has been so great as to render importation an extremely hazardous and costly proceeding.

Attempts have been made in the past to elaborate a method of immunising such stock against these diseases, with varying degrees of success. In 1911 Sir Arnold Theiler established a method which, while successful in the Union, was less efficient in this country, and its use had to be discontinued. Our own attenuated virus was then used with partial success, but last year it became exalted in virulence, and had to be discarded. With the discovery of the principles of systematic dipping, it was hoped that the danger of natural infection might be overcome, but it was soon apparent that animals bred on dipped areas, when removed to tick-infested veld, contracted redwater, and frequently died from it. So that, until systematic dipping is universal, its practice is attended by marked disadvantages, in limiting the movement of stock born on clean areas. But although redwater yields readily to regular dipping, anaplasmosis is not so easily eliminated. To confirm practical observations, certain experiments were conducted. Blood was taken from cattle which had been running for different periods on certain dipped areas, and was inoculated into cattle newly arrived from Great Britain, in which it produced no piroplasmosis, but a marked anaplasmosis re-action. In one instance blood from a nine months old heifer, born and running since birth on an area where five-day dipping has been practised under Government supervision for as long as five years, caused no redwater, but gave rise to a severe anaplasmosis, from which the inoculated animal died. It would appear, therefore, that under existing conditions the ideal method of dealing with these diseases is to supplement regular dipping with a simple and safe method of protective inoculation. To obtain such a method, a series of experiments was conducted on twelve Shorthorn heifers imported from Great Britain for the purpose. A first series of experiments was undertaken to discover a specific therapeutic agent against anaplasmosis, comparable in effect to trypan blue in the treatment of piroplasmosis, but, although numerous tests were made with drugs and sera, no success was achieved. A second series of experiments was conducted to discover and test various strains of virus which would give rise to a mild form of plasmoses within the limits of safety, followed by a marked degree of immunity or tolerance. The imported Shorthorn heifers were used for the purpose. Fortunately, with the first attempt, a very favourable virus was obtained, and six of the experimental animals upon which it was used suffered from mild reactions from which they recovered. This virus and modifications of it are now being tested on the remainder of the consignment, and if the favour-

able results are continued, it is hoped that within the near future the inoculation of imported stock may be undertaken with better results than hitherto. But it must be pointed out that the mild course of the disease artificially produced to a large extent depends upon a satisfactory and hygienic stabling and accommodation during the course of the reactions, and until this is provided, the inoculation of imported stock on a large scale cannot be attempted.

Trypanosomiasis. It has been estimated that some ten million acres of valuable territory in Southern Rhodesia are rendered unsuitable for stock by reason of the presence or the menace of tsetse fly (*G. morsitans*). During recent years this has shown a marked increase in numbers and distribution, and a tendency to establish itself in the areas from which it disappeared at the time of the rinderpest. Until 1913 the only trypanosome known to be transmitted by it in this country was one of comparatively low virulence, and belonging to the group named by Bruce *T. pecorum*; but in that year trypanosomes, indistinguishable from the *T. brucei v. rhodesiense* of Northern Rhodesia, were found in man and animals in the Sebungwe district. This parasite, which gives rise to a very much more acute infection than the *T. pecorum*, is, in certain circumstances, actually pathogenic to man, and is entirely resistant to treatment. Recently it has been shown to have a much wider distribution than was at first recognised, and there is a grave risk that, with the increase of *glossina*, it may become a serious danger throughout the fly areas.

Contagious Abortion. In November, 1913, information was given that a herd of cattle, at that time in quarantine on the Zambesi, were suffering from contagious abortion, and, on the arrival of these animals at Sipolilo, blood was taken from certain suspicious cases and was tested at the laboratory, with the result that it was found that four animals gave a marked positive reaction to the agglutination test. The matter being of such importance, the greatest care was taken in the performance of the test, for which three distinct strains of contagious abortion culture were used, namely:—

- (1) strain from the Pathological Laboratory of the Royal Veterinary College, London;
- (2) strain from the Nairobi Laboratory, British East Africa;
- (3) strain from the Onderstepoorte Laboratory (South African strain).

It is of interest to note that the reactions with each strain closely corresponded, indicating that the specific contagious abortion of those countries, namely, Great Britain, British East Africa, Union of South Africa, and Rhodesia, are identical. Samples of the same blood were sent to Sir John M'Fadyean, of the Royal Veterinary College, London, who was able to confirm the diagnosis.

About the same time cases of abortion occurred among the cattle on the farm Gatsi, Marandellas, and on the application of the test these were found to be due to the *B. abortus*. Recent investigation into this outbreak suggests that the disease originated some five years ago from an imported Devon bull, which was sold to a farmer in the Marandellas district, with the result that the disease became so prevalent in his herd that he was eventually compelled to sell his stock and farm. The dispersal of infected animals has led to the dissemination of the disease throughout the district, but at the present time the outbreaks are apparently of a less serious character than hitherto.

The fact that in this country, especially among native herds, there is a well-marked calving period, explains the fact that outbreaks of abortion have occurred at certain times; and since females who have aborted tend to lose the infection if they remain barren for a period

of five months, it is possible that a considerable number of infected animals will have become clean before the period of service again arrives. Experiments were conducted having a bearing upon the best means of dealing with the disease under the peculiar local circumstances. The principle of systematic dipping having been widely adopted in connection with other diseases, it was desired to ascertain whether the constituents of the five-day dip exerted any harmful influence on the *B. abortus*, for if so, the dipping of stock would tend to eliminate the disease by disinfecting the contaminated animals, but if not, the passage of such animals through the common dip would lead to the pollution of the dipping fluid and the possible infection of all susceptible animals passing through it.

The laboratory tests indicated that Cooper's Improved Dip, in strength suitable for five-day dipping, was rapidly harmful to the abortion organism, and the principle of systematic dipping in this fluid has been adopted as one of the measures to be employed in dealing with outbreaks of this disease. Experiments are now in hand with a view to preparing a vaccine for protective inoculation. The methods suggested by Stockman involve the use of a living culture of the organism, a process not free from the danger of transmitting infection, and not altogether desirable in a country where it is hoped the disease does not prevail to any serious extent.

A recent report by Buxton has drawn attention to the beneficial results from the use of dead cultures, which would involve considerably less risk. Tests are, therefore, being carried out to determine the relative merits of the two processes.

Horse Sickness. Although no figures are available showing the mortality of horses and mules during the past season, it is probable that it was not less than in 1911, when approximately £30,000 worth of equines died from this disease. Unfortunately Sir Arnold Theiler's serum for the inoculation of mules could not be procured during the past year, and his more recent method of inoculating horses was also withdrawn.

The experiments made at this laboratory prior to March, 1913, were taken up again in November, and two horses have been supplied for the purpose. The records collected of the horses previously inoculated are very satisfactory. Of the seventeen treated animals which were sold, only thirteen can be traced. Three of these are known to have died, but the remaining ten are still alive, although exposed in dangerous districts.

Sheep Diseases. Although it is estimated that there are in this country some 300,000 sheep, these are of a very inferior type, supplying very little mutton or wool.

The Acting Chief Veterinary Surgeon estimates that £70,000 worth of sheep are annually imported for consumption. It is a matter for regret that so little can be done to investigate the numerous diseases which bring about this unfortunate state of affairs, for it is felt that if these could be overcome, Rhodesia might in time rival many of the great sheep-producing countries of the world.

Lamziekte. The announcement in the lay press that Professor Hedinger, working in Sir Arnold Theiler's laboratory, had found this disease to be due to sarcosporidia, caused considerable uneasiness, as the parasites had previously been seen in the muscles of sheep and cattle in this country, where up to the present no cases of undoubted lamziekte have been observed. The officers of the Veterinary department having been circularised, preparations have been forwarded from stock in their various districts, and smears containing sarcosporidia have been received from the British South African Company's cattle on the farms Dunrobin and Netherburn in the Lalapanzi district, and from an ox from Tsesebe slaughtered at Bulawayo.

The accommodation at the present station is inadequate; a proper laboratory, with store-rooms, stabling, and grazing, is urgently required. Under existing conditions, investigation into infective diseases involves serious risks, and the inoculation of imported stock cannot be undertaken. Provision is also necessary for the destruction of carcasses and infective materials, and for the housing of the native staff.

LL. E. W. BEVAN.

The Microbic Infection met with in Wounds.

The following passage occurs in the lecture on "Wound Infections and their Treatment," by Colonel Sir Almoth E. Wright, M.D., F.R.S., C.B., at the Royal Society of Medicine, Oct. 8th to 14th.

"We now pass to consider very briefly the nature of the microbes which are carried into wounds from the soiled skin and clothing of the soldier. These microbes may, as I pointed out in a previous lecture, be classified—and the classification is important for treatment as well as for the understanding of the mode of infection and of the evolution of the wound—into two main classes, a class of *serophytes* which (presumably because they find ready-made pabulum in the blood fluids) can live and multiply in serum; and a class of *sero-saprophytes* which, so far as we know, can develop in the blood fluids only after these have lost their antitryptic property—the property in question being that which inhibits those digestive processes which would be capable of converting the native albumens of the serum into pabulum for microbes. Intermediate in character between the *serophytes* and *sero-saprophytes* is a class of microbes which cannot grow in the serum when we make only a small implantation, but which, no doubt owing to the fact that they bring into operation powerful digestive ferments, succeed in establishing themselves when we make a heavy implantation. We may call these *imperfect* or *secondary serophytes*.

To the category of *serophytes* belong the streptococcus and the staphylococcus—the latter being far inferior to the former with respect to its power of multiplying in unaltered serum. To the category of *imperfect serophytes* belong the bacillus aerogenes capsulatus of Welch (bacillus perfringens); the bacillus proteus; its close congener, the bacillus pyocyaneus; and the wisp-shaped diphtheroid bacillus commonly found in foul suppurating wounds.

To the class of *sero-saprophytes* belong the larger number of microbes found in such wounds.

It will suffice here to bring out a few of the more important points in connexion with the *serophytes* and *imperfect serophytes* which are found in wounds.

The microbe most universally present is a streptococcus. It differs in very many respects from the classical *streptococcus pyogenes*, which is met with, though much more rarely, in wounds. In film preparations of pus the streptococcus here in question shows up nearly always as a diplococcus. As obtained from agar and broth cultures, the elements of the diplococcus are lancet-shaped, and they are bent into an angle. To follow the French description, they resemble a circumflex accent or take the form of saddle-bags (*formes en besace*). In broth cultures we have interspersed with these a few short chains. The colonies as they grow upon agar are more opaque, less sharply margined, and somewhat larger than those of the streptococcus pyogenes. Instead of being as colourless as glass and severely discrete, they show up as very faintly grey-green, and, when planted closely, tend to run together. As compared with the ordinary streptococcus pyogenes, growth is also much more rapid—luxuriant cultures being obtained at 37°C. on broth and agar in four or five

hours. Moreover, growth is obtained, not only at 37°C. but also at the temperature of the laboratory bench.

The most remarkable characteristic of this streptococcus is, however, the freedom with which it grows out in normal serum, and also upon agar when transplanted in blood. When we implant into blood in emigration tubes, putting the tubes directly into the centrifuge, and from this into the incubator, we obtain after three to five hours with a moderate implantation a growth in the form of diplococci and short chains permeating the whole white clot; or, with very light implantation, a growth in the form of colonies clearly visible to the naked eye and consisting of typical convoluted chains made up of indefinitely numerous elements. In the case where we implant into blood and then implant the blood culture on agar, we have very opaque white convex colonies which may be as much as half, or even one, centimetre in diameter; and which, except for the fact that they are rather moister, closely resemble staphylococcus colonies. These are made up of lancet-shaped diplococci which might easily be taken for pneumococci. The surrounding blood is not hæmolyzed.

There will be no doubt in the mind of anyone who has studied descriptions and illustrations of the *enterococcus* and its mode of growth on ordinary media as given in French bacteriological text-books that the streptococcus here in question is the enterococcus of the French authors. Moreover, it may be taken as assured—for we have compared our cultures of streptococci from wounds with a series of cultures of streptococci obtained by Professor Dreyer and his colleagues from the stools of patients who were being searched in the ordinary way for typhoid and paratyphoid bacilli—that the streptococcus we are here considering is the ordinary streptococcus of the faeces. And assurance is made still more complete by the fact that when searching normal faeces by the *fæco-sero-culture method* my fellow worker, Lieutenant A. C. Inman, invariably obtained from the faeces in his after-washes a pure culture of a streptococcus which was, in all the above-mentioned morphological and biological characters, indistinguishable from that which is practically invariably present in the wounds. We may therefore take it as unquestionable that the streptococcus which is commonest in wounds is of faecal derivation, and both our *fæco-* and *pyo-sero cultures* show that if the smallest possible implantation of this microbe is made, in no matter what bacterial admixture, into serum, it will immediately grow out there.

With regard to the presence of staphylococcus in wounds, it may be pointed out that, by reason of its wide distribution in the skin and its serophytic properties, it is bound to be present in practically all wounds. We shall, however, presently, in discussing the results of our pyo-sero cultures, appreciate that its growth in the wound is very quickly restricted by changes in the blood fluids (and with these there may possibly be associated also changes in the leucocytes) which are produced by the immunising responses of the patient.—*The Lancet*.

Bovine Actinomycosis.

Numerous imported ox tongues have been found to be affected with actinomycosis, and the pathological laboratory of the Local Government Board have been conducting anatomical and microscopical research into the characters of the lesions in the lymphatic glands of the lingual region. A Preliminary Report on the Pathology of Bovine Actinomycosis, by Frederick Griffiths, M.B., Vict., has been published (Wyman & Sons, price 2d.) The material was furnished by 46 tongues from Argentina, 2 from North America, and 2 from Siberia, whilst 44 fresh specimens from animals slaughtered in this

country were examined. The lesions in the 50 imported specimens have been compared with those in the 44 derived from this country. Numerous attempts to obtain from the imported tongues the causal organism in culture from the lymphatic gland lesions were unsuccessful. Inoculations with emulsion of diseased tissue in experimental animals did not produce actinomycotic lesions. In one case in a calf the disease seems to have been communicated by subcutaneous inoculation of cultures obtained from the home material. All the imported specimens contained specific granules in the lesions which would not stain by the Gram method, and in 23 of the British cases this fact was also observed. In four of the British cases specific granules staining by Gram were met with, and the histological features and anatomical distribution of the disease corresponded with that described by Lignières and Spitz in 1902 in Argentina cattle. The bacillus obtained had the characters of the actinobacillus. The investigator concludes that actinobacillosis is widespread in the world and forms a considerable proportion of the cases of disease in oxen known as actinomycosis. The investigations were curtailed owing to the war, and the biological properties of the organisms have yet to be studied. The transmission of actinobacillosis from animals to man has not yet been established, and there are no recorded cases of suspected transmission, although there is some evidence to show that the disease may be transferred to cattle, cats, and dogs by inoculation.

PARLIAMENTARY.

In the House of Commons on Tuesday, Nov. 2.

Mr. CURRIE asked whether the Treasury had suggested to the Veterinary Colleges in Edinburgh and Glasgow that amalgamation was desirable in the interests of economy, and the amount of the Government Grants given to these Colleges.

Mr. MCKENNA in reply stated that the Board of Agriculture for Scotland were invited on July 3rd and 28th to consider the question of securing economies generally, whether by amalgamation of institutions, or otherwise, at the various Colleges aided by them, they had been in communication with the Colleges, and the Treasury were now awaiting their final recommendations on the subject. The grants to the Scottish Veterinary Colleges are limited to a maximum of £800 a year for the two Colleges together.

Mr. WATT (Glasgow): May we assume that after the amalgamation it is the Edinburgh College that will go out of sight?

Mr. HOGGE (Edinburgh): Oh, no. (Laughter).

Thursday, November 11th.

Colonel Stavely Hill:—To ask the Under-Secretary of State for War whether veterinary officers of the Territorial Force holding lieutenants' commissions will, at the expiration of twelve months' service, be promoted to the rank of temporary captain in the same way as veterinary officers in the new armies are now promoted.

Mr. Tennant:—I have some hope that this may be possible, but I cannot give any pledge.

In answer to a question by Mr. W. THORNE concerning Mr. T. Dunlop Young's absence from his profession duties at the London Central Meat Market:—

Mr. FORSTER: The gentleman referred to in the latter part of the hon. member's question was an officer in the Territorial Force Army Veterinary Corps, who was called up on mobilisation, and until recently did duty with Territorial unit. He has now been transferred at his own request to the Remount Depot at Woolwich, where he is engaged on most important work, and it is not proposed to move him.

FOOT-AND-MOUTH DISEASE.

In answer to Sir J. Spear (Tavistock, U.), Mr. Acland (Cornwall, Camborne, L.), said:—Since my reply to the hon. member of the 9th inst., there have been in Somerset five additional outbreaks confirmed, bringing the total up to 39. Until yesterday the further spread of the disease had been confined to the district immediately to the east of the city of Bath, along the banks of the Avon. The latest outbreak is, however, I regret to say, in an entirely new district of Somerset, some four miles south-east of Glastonbury, and its occurrence has necessitated the imposition of restrictions over a wider area. Apart from this outbreak, the position in and around Bath is becoming more satisfactory, and the outbreak is being got under; and there is no reason at present to anticipate any very serious spread of the disease in the neighbourhood of Bristol.

Glasgow Veterinary College (Incorporated).

A meeting of the Board of Governors of the Glasgow Veterinary College was held within the Secretary's chambers, 105 St. Vincent Street, Glasgow, on Wednesday, 10 inst., when there were present Sir Hugh Shaw Stewart, Bart. (in the chair), and Messrs. Hugh Begg, Walter W. Blackie, James Cameron, Walter C. B. Christie, Alexander Cross, James Johnstone, J. Campbell Murray, Alexander Park, John Pollock, William Strang, and Alexander Russell, the Secretary. The Chairman intimated apologies for absence from Sir Simon Macdonald Lockhart, Bart., M.V.O., Sir David C. M'Vail, and Messrs. Horatio R. B. Peile and James Rodger.

The Chairman, in opening the meeting, stated that he was sure the Governors would desire to place on record the great regret with which they had learned of the death of Principal M'Call. The Principal had been ill for some time previous, and he had attained a very ripe age, but his loss was none the less greatly felt on that account, for up to the time of taking to his bed his faculties were unimpaired, and he was taking full interest in the affairs of the College, with which he had been connected for nearly fifty years. He was sure the Governors would wish it placed on record in the minutes that they greatly regretted the loss, and had a very high opinion of the services which he had rendered to the cause of veterinary science in general, and particularly in the West of Scotland, and that an excerpt from the minutes should be sent to the widow and members of the Principal's family.

Mr. Campbell Murray, Vice-Chairman of the Board of Governors, in seconding the Chairman's motion, stated that not Scotland only, but the whole nation, had sustained a very serious loss. Principal M'Call had laid the foundation of the College firm and sure, and his example would be an incentive to them in the future.

A Roll of Honour of the lecturers, graduates, students and employees of the College serving with His Majesty's forces was submitted to the meeting and approved of, and it was agreed to have it hung in a suitable place in the College.

The Secretary reported that Mr. Alexander Cross had been re-elected representative of the Highland and Agricultural Society on the Board of Governors, and Mr. Peter Reid representative of the County Council of Argyll.—*The Scottish Farmer*.

For causing three calves to be slaughtered in contravention of the Maintenance of Live Stock Order, 1915, Archibald Holdstock, wholesale butcher, was fined £10 at Reading Police Court. It was stated that this was the first conviction in the United Kingdom under the Order.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Nov. 12.

REGULAR FORCES. ARMY VETERINARY CORPS.

Major A. G. Todd to be temp. Lt.-Col. whilst holding the appmnt. of Dep. Director of Veterinary Services, dated Nov. 7.

Capt. W. N. Rowston to be temp. Major whilst holding the appmnt. of Asst. Director of Veterinary Services, dated Sept. 13.

Temp. Lieuts. to be temp. Captains:—F. G. Sikes, dated Oct. 8. A. Conisbee (Oct. 16.) R. Scott (Oct. 30.) H. Mitton (Oct. 31.) C. A. Hutton, F. Crowhurst (Nov. 2.)

To be temp. Lieut.:—R. C. Moore, dated Nov. 1.

To be temp. Qmr. with hon. rank of Lieut.:—H. Barrs, dated Nov. 9.

Nov. 15.

To be temp. Lieuts.:—T. H. Kellett, dated Nov. 1. W. B. MacFadzean (Nov. 2.)

Nov. 16.

Temp. Lieuts. to be temp. Cpts.:—M. P. Hatch, dated Nov. 1. F. G. Buxton (Nov. 5.)

To be temp. Lieuts.:—G. Wachter, dated Nov. 1. C. H. Sheather, F.R.C.V.S. (Nov. 3.) G. M. Yardley (Nov. 5.)

Nov. 17.

Temp. Lieuts. to be temp. Cpts.:—D. G. Davies, dated Oct. 11. J. Richardson (Oct. 26.)

To be temp. Lieuts.:—G. Gordon, dated Nov. 1. Z. B. Rutherford (Nov. 3.)

To be temp. Qmr. with hon. rank of Lieut.:—H. Lloyd, dated Nov. 9.

Nov. 18.

Capt. A. B. Myhill, from S. African Vety. Corps, to be temp. Capt., dated Nov. 19.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Nov. 16.

Lieut. W. Clarke is removed from the T.F. for absence without leave, dated Nov. 17.

The following casualties are reported:—

WOUNDED—Pte. R. Betteridge, 2846; Pte. S. Livermore, 7057; Pte. M. Rippingill, 1993.

Lieut. J. R. GREEN, F.R.C.V.S., A.V.C., 2/1 South Nottinghamshire Hussars, has recently been notified by the War Office of the death of his son, Sergt. Harry Green, 4th Battn. Leicester Regt., who was killed in action before the Hohenzollern Redoubt on Oct. 15th. The deceased was in his 22nd year.

Mr. J. G. PARR, of Leicester, writes us: "I received a post card on Nov. 13 from my son, Capt. F. S. Parr, saying he was wounded and a prisoner, but was being well looked after. The post card was dated Oct. 18, '15, five days after the charge."

It was announced in ours of Nov. 6 that Capt. Parr had been killed in action, leading the charge on the Hohenzollern Redoubt.

Army Veterinary Surgeons.

To the Editor of the Times.

Sir,—I venture to send you part of a letter received by me from a veterinary surgeon serving at the present

time in the Territorial Force. I hope you will be so good as to publish it, as it shows the grievances under which these officers are suffering. Mr. Tennant promised last summer that the question as to their promotion should be studied; but, when asked last Tuesday, October 19, whether the question were now settled, he again replied that the matter was being considered. In the interests of the officers in question, there appears to be no course open but to make their grievances public through the press. I understand that the Army is short of veterinary surgeons, and do not wonder under existing conditions.—Your obedient servant,

F. A. NEWDEGATE.

House of Commons.

At the beginning of the war veterinary officers who offered their services were granted commissions either through the War Office or through an Assistant Director of Veterinary Services, Territorial Force. In the former case officers were allowed to take their commissions for one year only, but in the latter the period of the commission was apparently for three years, thus committing themselves for a much longer period. After some time, in order to obtain more officers, the War Office offered a bonus of 62 days' pay for each year of service to those taking temporary commissions under them, and now, in order to hold their officers, they are granting promotion to captain's rank after the end of the year's service.

The position is that those who joined at the same time, except that they bound themselves for three years instead of for one year, and happened to be gazetted through a Territorial Force officer instead of the War Office, are still lieutenants, and the others are captains. Therefore it arises that an officer who joined through the Territorial Force officer on August 4, 1914, is now a lieutenant and bound for three years, whereas an officer who joined on October 4, 1914, but through the War Office, and for one year only, is now a captain if he has chosen to renew his commission. It is also a fact that men who graduated in July, 1914, and joined for one year through the War Office, are now captains, and men with from 15 to 20 years' experience, joining through the Territorial Force officer, are lieutenants. Those officers of the Territorial Force and Special Reserve who were gazetted in the Territorial Force previous to the war, speaking generally, remain lieutenants until they have done five years' service, so that these officers are in very many cases lieutenants still. The position in their case is very galling, but perhaps not quite so fatuous as in the case of those who joined after the outbreak of the war, it being purely a matter of chance how they were recruited.

In the R.A.M.C. all officers receive promotion after six months' service, because it is felt that as junior officers they suffer after making heavy sacrifices; this applies also to A.V.C. officers, and in both cases they join as experts and require no training before being efficient.

Personal.

MCINTYRE—MITFORD. On 9th Nov. at St. Peter's Ickburgh, Norfolk, Capt. Gordon McIntyre, A.V.C., attached to the 1st E.A. Brigade of the R.F.A., eldest son of the late W. T. McIntyre, of Glasgow, to Margaret Constance Forrester, only daughter of the Rev. W. L. Mitford and granddaughter of the late E. L. Osbaldeston Mitford, of Mitford, Northumberland, and Hunmanby, Yorkshire.

Mr. A. M. TROTTER has been appointed *ad interim* to the late Professor McCall's municipal posts.

OBITUARY

Lt.-Col. JOHN R. D. BEECH, C.M.G., D.S.O., M.R.C.V.S.
Graduated, Edin.: April, 1881.

Lt.-Col. Beech died at Louth while commanding the 2/1st Regiment of the Scottish Horse. He entered the Army as a *veterinary surgeon*, and served through the Egyptian War of 1880 and 1881. He then joined the Gordon Relief Expedition, and later, went to Abyssinia with Sir Gerald Portal, and carried the Queen's letter to King John of Abyssinia. Owing to the illness of Sir Gerald Portal he went alone on this dangerous expedition, and for this service was awarded the C.M.G. He was also granted a combatant commission in the 20th Hussars, and King Edward (then Prince of Wales) recommending him for an antedate of seven years, he received his captaincy. He was the only man who received the seven-clasp medal in the Egyptian campaign. In two of the biggest battles he was in command of the Egyptian Cavalry, which he led to victory at the age of 25 years. He was awarded the D.S.O. for gallantry at the Battle of Toski. He also received the Osmanieh and the Medjidieh orders and the Khedive's Star, and was four times recommended for the V.C. He married and retired from the Army, but joined again for the South African War, serving on Sir John French's Staff, and receiving the medal with five clasps. Colonel Beech commanded the 2nd Regiment of Scottish Horse from 1904 to 1913, and on the outbreak of the present war given command of the 2/1st Regiment Scottish Horse. The funeral took place at Innerwick, Glenlyon, on Wednesday, Nov. 10.

JOHN JACKSON BELL, M.R.C.V.S., Lonsdale St., Carlisle.
H. & A.S., 1858. Edin.: Nov., 1879.

"We record with much regret the death of Mr. J. J. Bell, at his residence in Lonsdale Street, Carlisle, on Saturday, 13th inst. Mr. Bell, who was in his 82nd year, had been in feeble health for two or three years, but, with his high spirit, he kept moving about almost to the last.

Mr. Bell was a man of boundless energy, and for more than half a century took a conspicuous part in the local life of Carlisle and the district round it. His firm were the leading veterinary surgeons in the large agricultural district of which Carlisle is the capital. Mr. Bell was for a long period closely identified with the Carlisle Volunteer Fire Brigade, latterly in the capacity of captain; he was a director of the Carlisle Racecourse Company; he was a director and for some years Chairman of the Carlisle Old Brewery Company and other undertakings; he was Vice-Chairman of the Council of the Cumberland Agricultural Society and a marshal of its shows. He established the Carlisle Christmas Dinners for the Poor, and practically "ran" that charity single-handed for over twenty years; and, a keen Conservative, he was in the thick of every political fight in Carlisle and the East and North Cumberland divisions. Few men have crowded more—or so much—effort into their lives. His vitality was indeed amazing: even in the last few months, when bodily infirmity made it difficult for him to get about, his mind was alert, and he kept in close touch with private and public affairs. He was the son of the late Mr. James Bell, auctioneer, Warwick. When 13 years of age he went to serve his articles with the late Mr. Joseph Carlisle, v.s., Carlisle, who had his veterinary establishment in the Royal Hotel yard in Lowther Street, close to the present site of Bank Street, which was then merely a flagged lane.

Qualified in 1859, he went into partnership with his late employer, the partnership lasting about 46 years, until Mr. Carlisle's death in 1905, at the patriarchal age of 96. For years before his retirement he was joined in

his practice as a veterinary surgeon by his eldest son, Mr. James G. Bell.

The interment was at Carlisle Cemetery on Tuesday morning. The veterinary profession was represented by Mr. R. Craig Robinson and Mr. J. W. Hewson."—*The Cumberland News*.

JAMES EDMUND HARDIE, St. Saviour's Gate, York.
N. Edin.: Dec., 1895.

Mr. Hardie died on Oct. 30th, aged 41.

JOHN RUSSELL, v.s. (Existing Practitioner), Minshall Street, Manchester, died on Nov. 14th, aged 79.

Mr. JAMES SINCLAIR, for many years editor of the *Live Stock Journal*, died at his residence in London on Friday evening, 5th inst., after a brief illness. He began journalism on a Scottish provincial paper, *The Banffshire Journal*: subsequently he was sub-editor to the late Mr. James Macdonald on *The Farmers' Gazette*, Dublin, and the two men collaborated in producing the "History of the Aberdeen-Angus breed," and the "History of Hereford Cattle." Later, Mr. Macdonald became editor of *The Live Stock Journal*, with Mr. Sinclair as sub-editor, and early in 1886, when Mr. Macdonald retired, Mr. Sinclair became acting editor.

CHAUFFEURS AS BOARD INSPECTORS.

In these times we hear a lot about economy being practised on every side, and there is great need for it. It is very annoying to see the unnecessary expense that is incurred in many Government departments. Only the other day I was told of a case where a Board Inspector went into a neighbouring practitioner's district to examine a pig that had died and was reported by the paid practitioner, and I was much surprised to know that the chauffeur made the post-mortem while the Inspector looked on. Of course, I may be mistaken, but I was always under the impression that the Board were most particular in that the Inspector did the work himself.

Now, surely the local veterinary surgeon could just as well act for the Board and thus save the Government much in the year that goes in mileage, and not trouble such an Inspector to come into his practice.

Part-time Inspectors we know very well are often mean enough to make use of this introduction to their brother practitioner's clients, and then their so-called professional etiquette vanishes.

This half-time system is most unfair to the majority of the members of the profession, and I am positive that if the Board took veterinary surgeons on the whole more into their confidence and allowed each vet. to work his own district, or, on the other hand, put on whole-time Inspectors, the work would be carried out quite as satisfactory and at half the cost. At a time such as this is, when our country wants every penny she can get, it behoves all who can to denounce every form of extravagance.

"COUNTRY VET."

Hog Cholera.

[The following extracts are from the Report of the Veterinary Director-General for Canada, Dr. F. Torrance, B.A., D.V.S., for the year 1914].

The losses occasioned by this disease in 1913 have been surpassed by the year 1914, and I regret to report that in the Dominion some 9900 hogs were slaughtered as diseased or in contact with the disease, at a cost of \$61,588.44 in compensation. These figures are much higher than we could wish, but their loss must be looked upon as the price we have to pay for keeping the rest of our hogs healthy, and as the hog population of

Canada is approximately 8,000,000, the loss of even ten thousand is not high.

The policy of slaughter of all affected herds has been pursued as before, and as a proof of its efficiency we may cite the fact that the disease rarely breaks out a second time on premises where it has been extirpated. The vast majority of the outbreaks occur on premises where the disease was previously unknown, showing the possibility of entirely eradicating the disease if fresh sources of infection could be controlled.

The feeding of uncooked garbage to hogs continues to be, in many cases, the cause of the initial outbreak. From this starting point the disease quickly spreads to adjoining premises, and may attain large dimensions before it has been brought under control. The neglect of owners to notify the department of the existence of the disease is the chief reason for this, and arises generally from ignorance of the proper course to pursue when hogs are first noticed to be sick. In some cases, however, there is reason to think that owners are loath to report cases of disease for fear of the loss they may be called upon to sustain if hog cholera is found to exist and their herd is destroyed. A more liberal valuation of hogs slaughtered would tend to remove this objection on the part of owners to promptly report suspicious cases, and in my opinion would save the department more than it would cost, besides removing a cause of dissatisfaction with our policy.

As some criticism has appeared from time to time directed against our system of dealing with this disease by slaughtering affected animals as well as those in contact with them, and advocating the methods used in the United States some explanation of our reasons for preferring our present system will be in order.

In dealing with hog cholera by immunization, two methods may be used. The serum alone method consists in injecting into the hog it is desired to protect a dose of serum, obtained from the blood of another hog which has been artificially rendered exceedingly resistant to the disease. Such a hog is known as a hyper-immune and a dose of its serum injected into a susceptible hog will render it also immune to hog cholera. The immunity conferred in this way is, however, of short duration, and disappears after a time, leaving the hog as ready to contract the disease as before.

In order to obtain a lasting immunity, the simultaneous or double system is adopted. This involves the injection of virulent or highly infective blood at the same time that the protective serum is injected. When the dose of each is properly proportioned to the weight of the hog, and the serum and virus are both of requisite strength, a degree of immunity is produced that lasts much longer than when serum alone is used.

If it were practicable to thus render all the hogs in a country immune, there is no doubt that the disease could in that way be controlled, but it would have to be continued indefinitely, for the immunity of the sow is not conferred on its young, and these would die of the disease unless also immunized. In order to obtain the necessary serum and virus the disease must be kept alive in the laboratories where these agents are prepared, and consequently the country adopting this method will always have the disease. The experience of such countries shows that instead of controlling the disease, immunization methods tend to render it more widespread. Active virus has been sent out from laboratories directly to farmer with instructions how to use it; the accompanying serum has failed to give the protection expected, and fresh outbreaks have occurred. Even when the necessary immunity has been produced the danger is not over. The immunized hog, while protected against the disease itself, harbours the germs for an unknown period, and, if brought into contact with susceptible hogs, is capable of communicating the disease.

I am convinced that the simultaneous method of immunization has done more to spread hog cholera in the United States than any other agent, and although our losses from this disease are heavy, I believe they would be still heavier under that system.

From report by A. E. MOORE, D.V.S., Chief Travelling Inspector. (Appendix No. 3.)

"As in former years, the origin of many of the outbreaks of hog cholera has been the feeding of hotel garbage. These garbage-fed hogs are always in large lots, and consequently the losses are heavy. The practice of feeding this material should be prohibited.

As I have many times previously reported, not only do these outbreaks create new hog cholera centres all over the Dominion, but the hogs are kept in indescribable filth, and fed on material containing every conceivable refuse, and in all stages of decomposition. The people who collect and feed this garbage are usually foreigners, Italians, Swedes, etc., or irresponsible persons who have no regard whatever for cleanliness or sanitary surroundings.

I have instructed all the Inspectors who have their headquarters in cities to make periodic inspections of all the garbage-fed hogs in their surrounding districts, to warn the owners as to the danger of feeding this material, and to inform them that the department may withhold compensation should their hogs develop hog cholera."

From report by D. S. TAMBLYN, D.V.S., Inspector in Charge, Saskatchewan. (Appendix No. 5.)

"The history of a number of outbreaks dealt with by our officers during the past year tends to prove that the infection was caused by the feeding of garbage collected from hotels. This, I may state, was very noticeable in infected areas in close proximity to towns. In the vicinity of Saskatoon, for instance, a number of swine owners were warned against the feeding of hogs on uncooked garbage or kitchen refuse, or on any raw animal flesh or similar food likely to convey the infection of hog cholera or swine plague, and were handed a copy of the regulations as well as the bulletin issued by this department in connection with this malady. Their rejecting of our officer's advice along these lines resulted in a second outbreak on their premises, with the result that they forfeited their rights to compensation.

I am also under the impression that the spreading of this disease was greatly due to neighbours visiting infected premises, where they had gone to sympathise with the owners, not thinking of the danger they were running into of carrying the infection to their own animals.

My notice has also been drawn to the fact that often a number of hogs are shipped to abattoirs for immediate slaughter. Many of these animals upon arrival are found to be in an unfit condition for slaughter; therefore, they are culled out and sold to anyone. In most instances, farmers purchase such animals and remove them to their farms. The point I wish to draw your attention to here is that the hogs so purchased are sometimes obtained from infected areas, so that there is a tendency to spread infection through this channel.

Another channel of infection which I consider of great danger is through the importation of live stock other than swine; owners of stock often bring along in their cars hog troughs, which in many cases may have been in use in infected areas.

Wheat, barley, hay, and litter accompanying such importations are also a source of danger. The origin of the Kerrobert and Luseland outbreaks I attribute to this source, as most of the settlers in that part of the province immigrated from the States of Minnesota and Iowa."

From report by J. C. HARGRAVE, D.V.S., Inspector in Charge, Alberta. (Appendix No. 6.)

"This disease of hogs has manifested itself to a greater extent than ever before in this province, and the investigation by inspectors indicates that the feeding of uncooked refuse and garbage from hotels and restaurants is responsible for these numerous outbreaks. Hog raisers, however, are commencing to realise the necessity of thoroughly cooking this garbage, and many have discontinued using it. Two cities within the province have taken steps to prevent its use by collecting all such refuse and disposing of it through their incinerators."

From report by W. W. STORK, V.S., Inspector in Charge, Toronto. (Appendix No. 8.)

"During the year, several serious cases of hog cholera developed in vicinity of Toronto, the trouble, we believe, emanating from hogs being fed on table refuse."

Every outbreak was energetically dealt with, special attention being given to rigid quarantine enforcement and disinfection of premises. We have impressed on owners the necessity of keeping premises in sanitary condition, and are doing our best to discourage the use of refuse food."

From report by M. V. GALLIVAN, V.S., Inspector, Lethbridge. (Appendix No. 10.)

"I have dealt with two outbreaks of this disease, one of which occurred on premises of Crowsnest Pass Lumber Company at Galloway, B.C., and the other on premises of J. B. Jett & Co., of Taber, Alberta. The origin of both these outbreaks was due to feeding uncooked garbage, and I found it necessary to slaughter one hundred and forty-six (146) hogs, all of them being sufficiently affected with disease to render carcasses unfit for human food."

SHIPMENT OF LIVE STOCK TO NEW ZEALAND.

Westminster Chambers,
13, Victoria Street, London, S.W.

In continuation of my circular letter of the 4th January last on the above subject, I now beg to inform you that authority has been received from the New Zealand Government to amend the regulations governing the shipment to the Dominion of Cattle, Sheep and Pigs from Great Britain and Ireland, and in addition to the usual regulations as to "owner's declaration," etc., the following conditions will now apply:—

(1) For one month from the date of an outbreak of Foot-and-Mouth Disease no shipments may be made: provided, however, that an outbreak in one country shall not be held to prohibit shipments from the others, e.g., and outbreak in England will not prevent shipments of cattle, etc., from Scotland or Ireland.

(2) After one month from the date of the last outbreak, cattle, sheep or pigs may be shipped at London, Liverpool or Glasgow to New Zealand from any part of the country, provided that, until three months have elapsed from the date of an outbreak, no shipment shall be made of cattle, sheep or pigs which have been, since the date of that outbreak, within a radius of 15 miles round the seat of the outbreak.

(3) For the six months following an outbreak of Foot-and-Mouth Disease the fodder accompanying live stock (including horses) to New Zealand must be the produce of a county where no Foot-and-Mouth Disease has occurred for six months prior to the date of shipment, must be sent direct from such county to the ship's side, and a sworn declaration as to its origin must be provided.—Yours faithfully,

ALEXANDER CRABB, F.R.C.V.S.,
1st November, 1915. Veterinary Officer.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.		Outbreaks	Slaughtered. *
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended November 13	10	11	7	56			9	30	5	68	191
Corresponding week in	1914 ...	10	12		2	2	†	†	5	95	660
	1913 ...	15	15	1	23	2	3	28	45	4	55
	1912 ...	16	16			3	4	24	47	7	39
Total for 46 weeks, 1915	...	504	571	38	272	41	74	||722	||1559	174	3586
Corresponding period in	1914 ...	641	702	24	124	90	271	†1530	†2642	170	3865
	1913 ...	490	539	1	23	135	328	2151	4258	158	2215
	1912 ...	675	757	52	639	161	296	2553	5396	224	2623

† The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, Nov. 16, 1915

† Counties affected, animals attacked: —

|| Figures for thirty-three weeks only.

IRELAND.		Week ended Nov. 13		1	1	...	...	...	...	Outbreaks	7	4	8
Corresponding Week in	1914 ...	...	...	...	...	...	...	...	...	...	4	1	21
	1913 ...	...	...	...	...	...	...	...	...	...	12	2	1
	1912 ...	...	...	...	...	...	...	...	...	...	9	1	21
Total for 46 weeks, 1915	...	2	2	...	...	1	3	65	362	224	1280		
Corresponding period in	1914 ...	1	1	76	957	...	...	72	444	181	917		
	1913 ...	...	...	...	...	1	1	111	448	128	830		
	1912 ...	3	3	68	882	...	...	59	313	201	1631		

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Nov. 15, 1915
Note.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1429

NOVEMBER 27, 1915.

VOL. XXVIII.

A SUGGESTION AND A PROGNOSTICATION.

In his brief but stimulating Presidential Address to the Central Veterinary Society, Mr. W. R. Davis touched upon two matters of great importance. One, upon which he dwelt at some length, was the splendid opportunities for observation which our members in the Army are now enjoying, and their present lamentable disinclination to report their experiences for the benefit of their colleagues. We referred independently to this subject last week; to-day, we simply ask all in the Army to read and consider the more detailed remarks of the Central President along the same line. The second subject was the prospects of our profession after the war. Most of Mr. Davis's remarks upon this—as, for instance, his prophecies of increased importance for cattle practice and preventive medicine on the one hand, and an augmentation in the numbers of quack practitioners on the other—will, we think, be generally endorsed by the profession. In addition to these points there is one broad truth which, with its bearings upon our prospects, we should all be able to grasp even at this early date.

Whenever and however the war may end, it is bound to be followed by a period of very great financial strain. The “years of inflated prosperity” which a Cabinet Minister has promised us may come in time, and we believe will. But before they can come we must face a long period of heavy taxation, curtailment of expenses all round, and especially curtailment in luxuries. This is now universally recognised as beyond dispute—but how does it bear upon the prospects of our profession?

The answer is not altogether encouraging. Undoubtedly our profession is of great economic value to the State; on the whole, we may expect its strictly economic utility rather to increase than diminish, and thus far we can be hopeful. But at the same time it is undeniable that, throughout the history of the profession, a great many of its practitioners have depended for a large part of their incomes upon the luxuries of the well-to-do and wealthy; and few will assert that this dependence has lessened during the present generation. We must expect to see this part of our practice dwindle; its amount will inevitably lessen, and probably such as remains to us will become less lucrative. The change is already apparent to some extent, and will become much more so. It will affect the actual majority of general practices more or less, and some will suffer very seriously.

We see no reason for pessimism as to our future. But the war, which has brought special hardships upon most trades and professions, has brought this to ours; and we must face the facts.

AN EPILEPTIC FIT OF LONG DURATION IN A PUPPY.

By HENRY TAYLOR, F.R.C.V.S., Haywards Heath.

A Cairn terrier puppy, seven weeks old, was brought to be treated for lice (*hæmatopinus*) with which he was literally covered. He was dressed by my man with a solution of Kresol (which is a preparation like Lysol, manufactured by Hay, Stevens & Co., Maryhill, Glasgow), the strength of which was approximately 2%, and the application had not long been proceeded with before he had a fit. He was an excitable little pup, which was probably the cause. In this fit he remained for no less than six hours.

The administration of Bromide of potassium was not successful because he was unable to swallow, but after the epileptic attack had existed for about five hours a few drops of methylated aether were injected subcutaneously. At the end of six hours on going to see him he was found to be walking about the room, though just previously he had *in statu quo ante*. The twitching of the head, jaws, and neck had existed without intermission for six hours, the animal being unable to stand all that time.

We generally use Kresol in 3% solution as a dressing for lice and have found it very efficacious and free from any ill effects. In the present instance only about 3 oz. of the 2% solution had been used, and as the fit came on just as he was being wetted it hardly seems likely that that was the cause, though it was one of those coincidences difficult to explain.

Some days afterwards the puppy was treated for worms, and a very large number were passed.

EHRlich'S DIAZO REACTION.

By G. GAIR, M.R.C.V.S., Conon Bridge.

So far as I am aware, Ehrlich's Diazo Reaction, has seldom, if ever, been used as a diagnostic procedure in veterinary practice in this country, I have, however, found it to be of considerable value in diagnosis as well as prognosis in cases of tuberculosis. The test is as follows:—

Prepare two fresh solutions, (1) a saturated solution of Sulphanilic acid in 5% of Hydrochloric acid; (2) .5% of Sodium nitrite. To 5 c.c. of urine add an equal quantity of solution 1; then add a few drops of solution 2, and shake till frothy; add ammonia till alkaline. A positive result is indicated if the liquid acquires a port wine colour, and the froth at the same time becomes red.

This reaction has a significance in certain diseases of the human subject.

(a) It is usually present in typhoid cases during second or third week; if the case is mild the reaction may be absent.

(b) In cases of tuberculosis, where the disease is very active, it is very constantly present.

(c) A positive result is more general in cases of measles than of German measles (Rötheln).

Cases occasionally happen where the tuberculin test is inapplicable, or even where, on its application, the reaction therefrom is not taken with the same diagnostic value through the presence of advanced disease, or other disturbances of nutrition. A few similar cases have come under my observation lately, but owing to the paucity of clinical symptoms, a decisive diagnosis could not be obtained. One of these cases was that of a short horned cow in good condition. The hair coat of the animal was dry and lacked the lustre usually observed in a healthy animal. No definite clinical symptoms appeared for guidance to a positive diagnosis. The urine reaction in this case was, however, most decided. The urine at once assuming a rich port wine colour, and the froth a rich red. A reaction so positive as this indicates acute or advanced tuberculosis; and is constantly present in such cases: such was the condition found on post-mortem examination in the case described, the carcass had to be entirely condemned as unfit for human food. Notwithstanding the very advanced state of the disease in both thoracic and abdominal cavities, no tubercle bacilli could be found in the urine.

Another case, a pedigreed four-year-old cow in good condition, four months calved and again pregnant. Calf suckling her. About a month before I saw her she was observed to be unsteady in her movements, but continued to feed well. These symptoms gradually became worse; then I was asked to see her. On moving her in the byre she staggered greatly, plunged, and fell on the floor on attempting to rise. She was unable to stand without the support of the stall, to which she pressed her left side, and continued to hold her head to one side, pressing it forward and upward; the reflex excitability and restlessness was well marked. Tubercular meningitis was suspected. These symptoms developed rapidly, as they not infrequently do even in apparently healthy animals; and are indicative of cerebral meningitis. This clinical picture resembles that produced by tumours and it obviously shows the difficulty of making a specific diagnosis, unless tuberculous lesions could be determined in other organs, which were absent in this case. The tuberculin test was, of course, inapplicable here; a positive reaction of the urine was, however, found although not altogether so highly coloured as in the previous case, and confirmed the diagnosis.

The post-mortem examination revealed tuberculosis of the meninges of the brain; the abdominal cavity was free, and only a few nodules were found in the lungs.

Recently I examined a byre of fourteen milk cows which had been unsatisfactory, as two years previously all the stock had to be removed on account of tuberculosis. The premises were then thoroughly disinfected and the ventilation improved. Although the owner was strongly advised to be careful in his new purchases, he selected them without submitting them to the tuberculin test. So unsatisfactory did the new lot become that it was found advisable to test them with tuberculin, when they all reacted to the test, with the exception of three animals.

With the object of ascertaining to what extent the disease was present in the eleven reacting animals, a sample of urine was obtained from each of them two days after the subsidence of the fever following the tuberculin injection; four of them did not respond to the urine test, but in seven, more or less positive reactions followed; the urine in some cases changing to a deep, and in others to a lighter, port wine colour. The superficial lymph glands of these seven animals were more or less enlarged, particularly the submaxillary, and in two cases slight enlargement of the supra-mammary glands could be detected on palpation.

Although this reaction occurs in tuberculosis its occurrence is not confined to tuberculosis. In the human subject there are several febrile conditions in which it occurs, notably typhoid fever and measles. It occurs also in some non-febrile conditions, e.g., in some cases of heart disease and of malignant disease.

I obtained it in cases of tuberculosis characterised by symptoms of acute leptomeningitis. The reaction is obtained most readily in conditions of advanced tuberculosis, and it justifies a serious prognosis.

The test is, perhaps, of less value from the diagnostic than from the prognostic point of view. When positive in a case of tuberculosis in the human subject or in cattle, systemic intoxication has usually proceeded pretty far.

ABSTRACTS FROM FOREIGN JOURNALS

THE HORSE AS A CARRIER OF FOOT-AND-MOUTH DISEASE.

Josef Toutenni, of Kisjenö, has published a note calling attention to the horse as a disseminator of foot-and-mouth disease (*Allatorvosi Lapok*). In his view, horses play a great part as carriers of the disease. The virus of the disease can be carried in and by the horse in a virulent condition; it can infect the ground by means of the horse's excrements and drinking places by means of his saliva, and this has been proved in concrete cases. The horse "seldom or never" himself suffers from foot-and-mouth disease; and on that account his agency in spreading it has been underrated. But in many cases where the source of the disease cannot be demonstrated, the horse might be discovered to have been the carrier.—(*Berliner Tier. Woch.*)

MEAT INSPECTION FOR THE GERMAN ARMY DURING THE WAR.

Müller, who since the beginning of the war has been attached to the military meat inspection service on the French front, has published an account of the procedure adopted (*Berliner Tier. Woch.*, 29 July, 1915.)

At first the animals slaughtered were of Belgian and French origin, but later they were German. The slaughtered animals were divided into quarters, hung in a fresh airy place, and only distributed to the army twenty-four hours after slaughter. The by-products—skin, intestines, fat, bladder, etc.—were also utilised. The living animals were inspected immediately after their arrival; and those which were debilitated or were suspected of being infected were slaughtered at once. Those which appeared healthy were re-inspected every day towards evening, at which time the number required for slaughter were selected.

Owing to bad feeding and often also to the unsuitable places in which they were kept, the animals lost flesh rapidly while awaiting slaughter. It was, therefore, found better not to keep more at a time than were necessary for four or five slaughterings.

Many accidents occurred during the transport of cattle—fractured bones, cases of suffocation, cutaneous lesions, etc. The transport of sheep was more fortunate; and amongst them there were very few accidents.

The maintenance of swine offered great difficulty, as during confinement they lost flesh and were readily affected with intestinal diseases. An outbreak of swine erysipelas occurred amongst the pigs of one transport. The author concludes that swine are the animals least adapted for victualling an army with fresh meat.

Meat inspection was carried on under very nearly the same rules as are in force in times of peace, with some slight modifications with regard to tuberculosis. In cases of recent hæmatogenous tuberculosis, or of tuberculosis localised in the intestine or udder with centres of softening, the carcase was not utilised. The examination of swine for trichinosis was omitted. Meat fit for consumption was not stamped; but a recognition mark was placed upon that which should not be eaten raw, viz., the flesh of slightly tuberculous animals and the tongues of aphthous cattle.

Many pregnant animals were found in the transports; and this constituted so great an inconvenience that the authorities finally excluded them from the transports, only admitting them after parturition.

The meat inspection for the regiment to which the author was attached was performed by two veterinary surgeons, and one more was employed in the storehouse and for administration. The number of animals slaughtered under the supervision of this staff in a period of four months was 3023 cattle, 4913 sheep, and 213 pigs.—(*La Clinica Veterinaria*).

THE RESISTANCE OFFERED BY FOWLS TO INFECTION BY *Spirochaeta-Gallinarum* AFTER THYROIDECTOMY AND SPLENECTOMY.

L. Launoy and M. Lévy-Bruhl have published some researches upon this subject (*Ann. Inst. Pasteur*.)

The fact that enlargement of the Thyroid glands and of the spleen is observed in both natural and experimental Spirochaetosis in birds prompted the authors to investigate the question as to whether these organs play any part in the resistance offered by birds to infection, and in the production of antibodies, and whether their removal would alter the course of the disease in any way.

A number of series of experiments in connection with removal of the thyroid glands are briefly recorded. From these it appears that removal of the thyroids does not reduce the degree of resistance offered by birds to infection, when the attempt to infect is made from one to sixteen days after the operation. Partial or complete removal of the parathyroids also appeared to have no effect.

It was further shown that the protective power possessed by the serum of recovered birds from which the glands had been removed was not lowered in any way.

In birds from which the spleen had been removed prior to their inoculation it was found that Spirochaetes appeared in the blood earlier than in the controls, and also that parasites were far more numerous in the blood of birds that had been operated upon. A further fact that was established is that the duration of the invasion of the blood is longer than in birds not deprived of their spleens. These phenomena are not accompanied by any increase in the severity of the clinical manifestations of the infection, in fact the symptoms are often less severe in animals upon which splenectomy has been performed.

Removal of the spleen does not affect the production of protective substances.—(*Trop. Vet. Bull.*)

W. R. C.

THE CENTRAL VETERINARY SOCIETY.

[NATIONAL V.M.A. SOUTHERN BRANCH.]

The monthly meeting was held at 10 Red Lion Square, London, W.C., on Thursday, November 4th, Mr. W. R. DAVIS (President) in the Chair.

The following Fellows signed the attendance book:—Prof. J. Macqueen and G. H. Wooldridge; Messrs. N. Almond, J. B. Buxton, F. W. Chamberlain, G. S. Heatley, Herbert King, G. H. Livesey, W. Perryman, E. L. Stroud, J. Willett, A. E. Willett, and Hugh A. MacCormack (Hon. Sec.); Visitor, Mr. T. M. Timoney.

The minutes of the last meeting were taken as read and confirmed on the proposition of Mr. J. Willett, seconded by Prof. Wooldridge.

Apologies for absence were announced from Col. C. Rutherford, Mr. J. W. McIntosh and Mr. F. W. Willett.

There were no morbid specimens, but Mr. A. E. Willett mentioned the case of a Yorkshire terrier bitch mothering the kittens of a cat which had lost its life on the railway. The kittens were only a week old when

their mother was killed, but the terrier brought them up, although she had never had any puppies, but came into milk, as numbers of them did. They became very fine little animals.

The PRESIDENT said that it was well known that maiden animals, canine and equine, came into milk, but he thought it was very remarkable that one should have sufficient milk to bring up kittens, putting aside the fact that the bitch took to them.

PRESIDENTIAL ADDRESS.

W. R. DAVIS, M.R.C.V.S., Enfield.

Gentlemen,—I have to beg your patience while I inflict on you the inevitable presidential address. Custom demands it, but I cannot help thinking that if the address were premitted the custom would be more honoured in the breach than the observance. I have first to thank you for having elected me to this chair. I am sensible of the honour conferred—the honour of presiding over the deliberations of this Society, one of the oldest, and certainly one of the most influential of our Associations. I ask your indulgence, and I feel assured of your support, in carrying out the duties pertaining to the office.

In view of the absence of so many of our members doing their duty at home and abroad in the service of their country, our meetings are sure to be held with greatly depleted numbers, allow me, then, to urge those who stay at home to be assiduous in their attendance, in the exhibition of morbid specimens, in recounting interesting cases, in reading papers, and in taking part in discussions. I know that the writing of a formal paper is an irksome task to practitioners, but most of us can, without great effort, present and describe a morbid specimen, or give the history of an interesting case—and these need not always be a successful one ending with the formula, "and the animal made an uneventful recovery." Let us recount our failures, and if they contain a lesson we may learn and apply it. In this connection, I may express the hope that since many members of our profession are placed in positions where they have opportunities seldom afforded for observing the maladies of equines, we may benefit by the record of their experiences and study.

Among the many subjects about which our colleagues serving the Government will be able to give us valuable information may be mentioned the care of horses and mules on shipboard, including opinions on the arrangement of standings, ventilation, feeding and watering, "mucking out," supply of drugs, instruments, etc. Then in the Depots, arrangement of sick lines and problems connected with stalls, boxes, clothing, feeding, bedding, etc. And with regard to disease, may we not expect to learn much of the incidence and connection, if any, between epizootics of catarrhal fever, strangles, bronchitis, pneumonia and pleurisy, influenza and pink eye? And then of the lesions observed in the post-mortem examination of animals dead from these diseases, how much our colleagues will have to tell us—an account of the differences of the changes undergone in the lung when the patient has been affected with ordinary pneumonia, contagious pneumonia, septic pneumonia, and that which complicates influenza and pink eye would be interesting, so also would an indication of the leading differential symptoms of these maladies. We may expect to hear definite opinions about the use of mallein, and of some nasal conditions simulating glanders seen in American horses.

Many problems connected with the treatment of disease should have light thrown on them—the use of counter irritants in respiratory affections of equines, and their complications; the value in these maladies of vaccines, of sera, phylacogens, atoxyl, neo-salvarsan, etc. The causes and treatment of colic, and the correlation

of certain symptoms in fatal cases with lesions found post-mortem is a subject about which there is still much to learn. Lastly, I am hopeful we may get much useful information about the treatment of wounds and of skin affections, ringworm and mange particularly.

So far, veterinary surgeons having charge of military horses have told us scarcely anything of their observations. A German veterinary officer certainly has related his experiences for the benefit of his profession in a professional journal, while an English veterinary officer has communicated some of his in an agricultural paper for the benefit of farmers.

Like that of many more legislative projects, the progress of the Veterinary Surgeons Act Amendment Bill has been brought to a standstill by the war. Meanwhile it has been found impossible to obtain a grant from the Treasury, and as we are spending £500 a year more than our income it is apparent that we must soon get to the end of our tether, and that the Council may be forced to call for voluntary subscriptions to keep our body afloat until we get the Bill.

The best thanks of the profession are due to our Council for their efforts which have succeeded in getting a rebate on petrol used by veterinary surgeons; apart from the saving that will be effected by this concession we should appreciate it as a graceful recognition of our worth and of our usefulness to the community.

It is pretty certain that this war will bring about changes more or less profound in most relations of life, and our outlook, among others, will doubtless be modified. I, however, see no grounds for pessimism. Apart from hunters, practice among pleasure horses will be more and more curtailed probably, but cart horses, which are dearer now than they ever have been, will for years demand increased attention. Cattle practice is likely to improve. £750 given recently for a two-year-old shorthorn heifer indicates the repute in which our stock is held, and everyone knows how dear good dairy cows are. I am convinced that owners of the smaller domesticated animals are more and more taking an attitude of affectionate interest in them, and getting to look upon it as a duty to have skilled advice for their ailments. Veterinary preventive medicine is certain to be regarded as of increased importance, and the advancing science of economics will bring home to the thinking public, recognising the inter-communicability of many diseases between animals and man, the necessity of scientific supervision of stock.

I am inclined to think that, for us, a sinister effect of the war will be an increase of the number of quacks. The shortage of veterinary surgeons has, I suppose, rendered it necessary to employ unqualified men—blacksmiths and others, to take veterinary charge of horse camps—sometimes sole charge, sometimes under a civil veterinary surgeon: these men will doubtless not be content to keep all their knowledge hidden, and I quite expect to find them interfering with the work of the qualified veterinary surgeon, and to read complaints about their practices.

The returns of scheduled animal diseases show that with the exception of swine fever, the Board of Agriculture continues to make good progress against these maladies. Following the recommendations of its Departmental Committee, the Board is placing at the disposal of farmers a serum to be used against swine fever, and we can only hope that an intelligent and loyal co-operation on their part will enable an authoritative judgment to be formed as to the value of this agent.

A resolution supporting compulsory pupilage has been sent to the R.C.V.S., and to all our Societies, and you are to discuss it to-night. While admitting that a valuable asset is possessed by the student who has served a pupilage, it must not be forgotten that there are many objections to the making of this pupilage obligatory on

all students. At College a keen student can acquire in a good many directions a satisfactory clinical experience. Where this instruction fails principally is in regard to cattle practice, and to the diseases and accidents met with in breeding animals and in young stock; so that a newly qualified M.R.C.V.S. who, having relied mainly on his College experience may be well enough equipped to begin practice in town, would at first doubtless have to face regrettable incidents in a country practice. It is to be remembered that many students join the College with no intention of engaging in country practice, and a year with a country practitioner might be regarded by them as a year lost. I must confess that if I had to begin again I would rather spend a year on a large arable farm than one in a country practice.

I thank you for a patient hearing, and I trust that a lively discussion of the resolution may ensue.

Mr. ALMOND believed it was unusual to discuss Presidential addresses, but he had great pleasure in proposing a vote of thanks to Mr. Davis for his interesting résumé of current events. The motion was duly seconded and unanimously agreed to.

COMPULSORY PUPILAGE—RESUMED DISCUSSION.

The following resolution was received from the Eastern Counties Veterinary Medical Association last May:—

"That in view of the great scarcity of veterinary surgeons the time has arrived to encourage the graduation of practical men, and this can only be obtained by a compulsory pupilage of students for at least twelve months with a qualified veterinary surgeon prior to being admitted as students at any of the Veterinary Colleges."

Mr. J. WILLETT reiterated what he had said at the last meeting—that pupilage should be made compulsory during the College career, but not a year before. The latter would be a great deterrent to students joining the College.

Mr. ALMOND said it was a subject which had been before the Society on many occasions during the last twenty or thirty years, and he held a very strong opinion, based upon a considerable amount of experience of students, that it was very essential they should have an opportunity of becoming familiar with the various domesticated animals which they were likely to treat in the course of their practice. He had also a large amount of experience of the deficiency which existed in the pupil of to-day in that relation. When he was a student the chief sources of pupils were the sons of veterinary surgeons, the sons of farmers, and the sons of blacksmiths, and in the great majority of cases men at that day had obtained experience in country practice before they came to College. If they had not, the result would have been even more disastrous than it was to-day, because the course of instruction and the means of instruction in those days were very different from what they are at present. He believed the student was now better instructed than at any other period in the history of the profession. One great defect was want of practical acquaintance with domesticated animals. After a four years' course of instruction a student might come up to be examined and show a very great amount of knowledge but on cross-examination show a deficiency on the practical side. He thought it would be admitted by those who had experience of students that on the practical side many were not sufficiently familiar with domesticated animals, and if that were so, was it fair either to the profession, to the public, or to the student, to turn such men out into the world to practise? It was well known that amongst students there was a large number who had a considerable amount of practical knowledge, but he had in mind that class of pupil which was drawn chiefly from towns. At the last meeting it was said that a year with a practitioner would be a year lost; and another member had said that he would rather spend a

year on a farm than with a veterinary practitioner. There was no doubt that a year spent on a farm would be a year very well spent, but the amount of knowledge obtained would be strictly limited. In his opinion, if students were required before presenting themselves for the Diploma, to show that they had spent twelve months on a farm or with a country veterinary surgeon it would be a good thing. With a country veterinary surgeon a student would be brought into intimate contact with a variety of patients on ten or a dozen farms a day if the practitioner had anything of a practice, whereas a man might be on a farm twelve months and not see a sick animal during the whole time, although he would get a desirable knowledge of animals in health on which his judgement of animals in disease would be based. Therefore, he did not agree that a year with a practitioner was a year lost, nor did he agree that of the two it would be better to spend a year on a farm than with a practitioner. He did not know that it would be practicable to make a student necessarily spend his time with a country practitioner, because a great many of the best practices had their headquarters in towns. London would be one of the least advantageous places for a pupil to spend his time. With regard to the question as to when the qualification should be adopted as a preliminary to examination, he did not think the present would be a good time. Veterinary surgeons were not available to take pupils, and it would be necessary to wait until the end of the war. Then it would be a decided advantage not only to the pupil but to the schools and to the public. The majority of the professors had spent a period in country practice before they attained to their honourable position, but to a very large extent that had passed away.

Mr. PERRYMAN thought the Society might well be engaged in discussing something more important than a hardy annual which cropped up more like a weed than a flower. He did not see why the Society should pledge itself to the resolution, and he could not see that there were any grounds for compulsory pupilage. The subject was discussed thirty years ago, but the Council took no steps to enforce compulsion, and there was every reason why they should not do so now. A student in these days was not compelled to look forward to spending his life in general practice, and from his experience of advertising for assistants he had come to the conclusion that four-fifths of them were looking out for colonial or Government employment; they had all specialised for some particular object, or were going in for dog practice. It was up to the students to make themselves familiar with practical work. In any case students should not be bound to compulsory pupilage prior to entering College. It was commendable for every student during his vacations to live with a practitioner and learn as much as he possibly could, and if he did not do so, and the examiners found he was not sufficiently qualified in the special branch in which he was to practice, he should be rejected. If more rejections came from the practical side of the examination, the students themselves would see the necessity for gaining that knowledge with a practitioner in the country. If there were any deficiency such as Mr. Almond had referred to, the examiners should be blamed for letting men go through who were not fit to practise, and he was afraid that it did prevail.

Personally, he served a pupilage and gained every advantage from it. A student who saw practice before entering college had a great advantage over the one who had not. There was a financial aspect of the matter.

Twenty or thirty years ago the course was three years, now it was four years, and to add on a year's pupilage would make it an expensive business. He suggested that no resolution should be carried pledging the Society to one course or another, the Society might emphasise the opinion that it was a beneficial thing for a student to gain knowledge from a general practitioner, but that

to suggest that it should be compulsory was contrary to the aims of the Society.

Professor WOOLDRIDGE said the point engaging his attention at present was not compulsory pupilage, but whether the students should join the army or not. He considered that students would be doing a far greater service to their country by continuing their studies to maintain the supply of veterinary officers, and it would have served a much more useful purpose had the Society been engaged in considering the *pros* and *cons* of that question. With regard to compulsory pupilage, his views might be summed up in the statement that a pupilage should certainly be served at some period before a candidate presented himself for his final examination, but as to when it should be served he did not think it could be dogmatically stated. All students before their final examination should be compelled to produce evidence that they had had at least twelve months in a general mixed practice, and it would be for the student to choose whether he gained that experience before entering College or three months in each year, or between the second and third, or third and final year's study. One great point he would learn which could not be taught in College, namely, the management of clients. A student would see the way in which the principal handled his clients, as well as the way he handled his patients, and for success both were necessary. It had been said that one could not insist on a man spending his time with a general practitioner, but in human medicine each candidate had to produce evidence that he had seen a certain number of obstetrical cases. Then there was the question of handling patients under conditions of general practice. It was all very well for a student to cast an animal at the College and operate under favourable conditions, but those conditions were often not obtainable in general practice, and the difficulty became insuperable if the man did not know how to adapt himself to the new conditions. That was not felt so much in this country as it was on the Continent, because the conditions under which operations were carried out at the Colleges here were much more like the conditions obtaining in general practice. In the Continental Veterinary Colleges very complicated apparatus was constantly brought into use which a general practitioner could not possibly run to. The ideal condition would be to have attached to every veterinary college a model farm on which the third year's course should be carried out. In the third year the students amongst other things had to learn the management of animals in health under the heading of Veterinary Hygiene, and if that was carried out in an ideal manner it should be carried out on a farm where the various kinds of farm animals were under constant observation. The most important problem of being able to ascertain whether an animal was not in health before he needed to worry himself as to what was wrong could be more easily solved in that way. One had practically to tell the student that the first thing he must do was to satisfy himself there was some departure from health, and if he was not well acquainted with the conditions of health, how could he detect any deviation from them? He himself served a pupilage of some considerable time before going to College, and also engaged in general practice during the vacations, and if he had his time over again he should certainly repeat that course. He did not think, however, that pupilage should be made compulsory to that extent. With regard to the candidates who devoted their time to specialising, and the suggestion that the examiners should find them out and plough them for their lack of general knowledge, his experience was that they did so. There was very little chance of students passing their final examinations now unless they possessed a very wide knowledge of the diseases of all the domesticated animals.

Mr. G. S. HEATLEY said that if the curriculum stated that men should have a practical insight into the diseases and treatment of animals it would go a long way towards solving the problem—it should be made a subject of examination. Then men would be bound to come forward possessing a knowledge they did not possess at present. There were plenty of men who when they came into a yard did not know which foot to lift or which hand to lift it with.

Mr. CHAMBERLAIN thought compulsory pupilage prior to entering college would be a deterrent to the number of students taking up the profession. Not only was there a four years course in front of them, but in some cases there was matriculation as well. A man generally went to college straight from school, when his mind was in a fit state to go on with his studies. If a student went straight from school into a veterinary practice, he would pick up a lot of bad habits, and come to the College with the idea that every prescription his practitioner used was an absolute specific. He might also learn to drink, for there was no profession in the world that has more temptations than the veterinary profession. When a student has gone through A., he has picked up a certain amount of knowledge which he could apply if he went with a practitioner for a certain time, but a man who had never been to College went to the practitioner with a blank mind, and was not in a fit state of receptivity to justify the waste of a year. Compulsory pupilage seemed to him absolutely unjustifiable before College, but he cordially agreed with Prof. Wooldridge, that every man should show evidence before his final that he had seen practice with a veterinary practitioner.

Mr. A. E. WILLETT said his impression was that a man who had seen a fair amount of practice, or had a good knowledge of the domesticated animals before he entered college, used to look down on the student who had no previous knowledge, and continued his college career by shirking lectures and avoiding the subjects which were now known to be the absolute ground-work of a professional career. There were many students who entered college with him who had no knowledge whatever of their profession, and not the faintest notion of handling domesticated animals, and they had now turned out to be really smart practitioners, good operators, and bold and fearless in the handling of any animals with which they came in contact. He would like to support what Mr. Chamberlain had said, because he believed a student would be very much improved if after having gone through his first course he spent some time with a good practitioner in the country.

Prof. MACQUEEN said the discussion as far as it had proceeded was an open confession of unfitness to practise the profession. Some of the speakers had gone the length of saying that the existing education of students was unsatisfactory. Whether it was wise to make that confession he did not know. The subject before the meeting was whether it was advisable to support the proposition of compulsory pupilage or not. In his view compulsory pupilage was not a good thing for anyone. He did not believe in compulsion; he believed in voluntarism. Something had to be left to the individual, and whether pupilage was compulsory or not, the outcome of a man's career depended upon himself. It was an old question in the profession. Pupilage of to-day was very different from what it was thirty years ago. What did a pupil learn thirty years ago in his one or two years pupilage with a practitioner? He learned how to harness a horse, how to wash a trap, how to clean bottles, how to clean windows, how to make up medicines, how to make tinctures, infusions and blisters, and how to colour drugs to please the public. The fault was not always the pupilage—often the fault was in the pupil who would not learn other things. It was

the same to-day, only the pupils were not taught the same things, and the profession had so much changed in its actual practice that there was now less need for pupilage of any sort. A man need know nothing about harness, because probably the practitioner only kept a motor car—if the pupil was wise he ought to learn something about machinery! Then with regard to drugs, the practitioner did not compound drugs now but bought them ready for administration.

There was no doubt the status of the veterinary pupil had improved, but there was a lot of nonsense talked about pupilage which on analysis had very little to recommend it. He looked more to the individual than to any sort of tuition. If an individual had not the necessary aptitude and adaptability he might be given the longest pupilage and never succeed.

He saw no objection whatever to the intending student knowing something about domestic animals, but it was his look-out to get that information before he entered college. Why should the future of a number of men be sacrificed to the effortless individual who cared nothing about the future? If pupilage was to be of advantage, the pupil should fill up the intervals between the college terms, by spending this time partly in England, partly in Scotland, partly in Ireland, and partly in Wales.

He should spend, say, three to six months in Scotland to learn how to stick to money; for three months he should stay in Ireland to learn language; another interval should be spent in England to learn tact of the most comprehensive kind; and lastly, he should go to Wales to learn practice. It was only in Wales that the members of the profession knew much about practice ("No, no"). Well, let the Fellows ask a Welshman! (Laughter). The gain to the individual from pupilage was very little. No one had yet said what the pupil was going to gain by his service with a practitioner, and no one had ventured to say how the qualities of the practitioner who might take pupils were going to be essayed. Pupils would not learn with every practitioner the very information Mr. Almond suggested they should learn. The knowledge of animals was the old tale of the grandmother and the grandfather—the grandson must be a veterinary surgeon because he is so fond of animals! Did anyone know of many members of the profession who had attained eminence in it through having served a pupilage? Of the past leading men of the profession, men that were now dead, how many had served a pupilage? Very few. He could suggest another way of viewing the question. Why not examine the finished article, the man waiting his diploma, and see whether he has got the necessary knowledge to justify his appearance in public as a practitioner. It was of no consequence to the public or to anyone how he acquired his knowledge if he was capable of carrying out his duties. But compulsion to his mind was a mistake in any profession, and he did not believe the veterinary profession would ever tolerate compulsory pupilage. Apart altogether from the financial or even the educational question, it was against the grain of the British public to have compulsion.

Prof. WOOLDRIDGE said there was compulsion every day, in general education, for instance; a compulsory matriculation and a compulsory four years' course.

Prof. MACQUEEN said that was because general education was free. He saw no ground for supporting compulsory pupilage, but he saw considerable advantage in some students—not all students—spending a certain part of the period of their curriculum with a practitioner. Although he had no very definite objection to offer to a pupilage of a modified sort, he certainly held most strongly that there should be no compulsion.

Mr. PERRYMAN said if it was necessary to have a motion he would like to move: "That this Society considers it advisable that students should have a

practical training, but does not uphold the system known as compulsory pupilage."

Prof. MACQUEEN seconded the motion.

Prof. WOOLDRIDGE proposed as an amendment: "That the Central Veterinary Society is of opinion that a practical training in mixed practice is desirable before a candidate presents himself for his final examination, but the Society does not consider a pupilage before starting the college course should be made compulsory."

Mr. J. WILLETT seconded the amendment.

Mr. PERRYMAN and Prof. MACQUEEN withdrew their resolution in favour of Prof. Wooldridge's, and on that resolution being put it was carried unanimously, and the Secretary was instructed to send it to the Eastern Counties Association.

A vote of thanks to the Chairman concluded the meeting.

HUGH A. MACCORMACK, Hon. Sec.

Cruelty prosecution at Bournemouth— improper treatment.

At Bournemouth Police Court on 10th inst, before Alderman J. Elmes Beale (deputy mayor) and other magistrates, William Hazelwood (67), of Edgehill Road, Winton, was summoned for having caused unnecessary suffering to a horse by omitting to give it proper and necessary treatment and attention between September 15th and October 22nd.

Mr. Harold Tattersall appeared for the prosecution—the R.S.P.C.A.—and Mr. Harold Salt, who represented the defendant, pleaded not guilty.

Mr. Tattersall said that defendant was called in to attend a horse which was injured, and he would call two veterinary surgeons to show that the treatment was absolutely wrong in almost every particular.

Cecil Norman Troke, Winton, postman, said that on August 12th he received a communication and went to the defendant, who displayed outside his house a board saying he was a "veterinary." Defendant with witness examined the mare, which was his (witness') sister's. Hazelwood told him to get some bandages from a harness maker, which witness did, and defendant told him the bandages were quite all right and were all that was necessary then. About ten days later he again saw the horse, when it was free and eating grass. It was very lame on the injured left foreleg. Mr. Hazelwood gave him no instructions as to feeding the animal. About a fortnight before the animal was killed it was standing on three legs and the wound was in a very bad condition.

Cross-examined, witness said that when he was called in first to see the horse it had sustained a badly cut fetlock and knee.

Gilbert Morgan Troke, of Winton, baker, said that on August 12th the horse had an accident and the defendant came the next morning and bathed and dressed the wound—a deep cut. Defendant said that it was a bad cut, but the mare would be well again in a month. Witness described the treatment the defendant gave the horse, and said that he did not advise him (witness) as to the horse's diet or treatment or that it should be slung. Several occasions he saw the defendant, who said that the horse could "pick" about in a paddock, and this she was allowed to do, but she hobbled about and only stood on three legs. Witness did not see any antiseptic used on the horse, which was much worse ten days after the accident. Witness went on to describe the further treatment the defendant gave the horse including the lancing of the wound with a knife (on which were brown spots, suggestive of rust). In reply to witness, defendant said that it would not be better to have the animal slung. Mr. Hazelwood stated several times that the horse would get better, but eventually Mr. J.

S. Wood, veterinary surgeon, was called in, and on his directions the mare was shot. During the last three weeks of the animal's life it suffered considerably. Witness had paid the defendant 30s. for his services.

In cross-examination, witness averred that the injured leg was a wounded fetlock and a grazed knee. He denied that he was the cause of the animal's suffering, but admitted the defendant had a very good reputation in Winton in regard to horses. Once the horse got out of the stable by accident, but he did not admit that the lameness was worse thereby.

John Stewart Wood, of Parkstone, veterinary surgeon, stated that on October 22nd he saw the mare and found her in a loose box. She was standing on three legs and resting the fourth. The mare was in great pain, and on the removal of the bandages witness found the fetlock joint swollen enormously. There was a large unhealed wound with a cavity in the centre, and outside it there were four or five long cuts made with a knife. Witness considered that the animal was suffering from septic inflammation of the fetlock joint and it ought to have been destroyed previously—soon after the accident. When witness saw the animal it was incurable, and he ordered the horse to be destroyed at once. At the post-mortem examination of the leg, witness found the animal was suffering from septic arthritis, and there was a large abscess in the joint. Witness would not have expected recovery. Properly sterilised bandages should have been used, also antiseptic washing of the wound, and the animal should have been in slings. It would give pain to the animal if it moved about in a paddock. Most improper was the lancing of the wound, and the horse should have been dieted. Acting contrary to these directions witness considered that unnecessary suffering would be caused the animal.

Thomas Bennett Goodall, of Christchurch, veterinary surgeon, said that he considered the defendant's treatment of the animal was improper from the beginning. He corroborated evidence given by the last witness. It was madness to lance an inflamed joint.

Inspector Taylor, R.S.P.C.A., spoke to destroying the animal on October 22nd. When he saw the defendant about the matter he said that he was "a horse doctor." He also told witness that he was called in two months ago to the mare and found a large hole in front of the fetlock. He poulticed it and it seemed to be getting well. He (defendant) believed Mr. Troke turned the animal out and the galloping about made a substance form. He saw it again and treated it as well as he could.

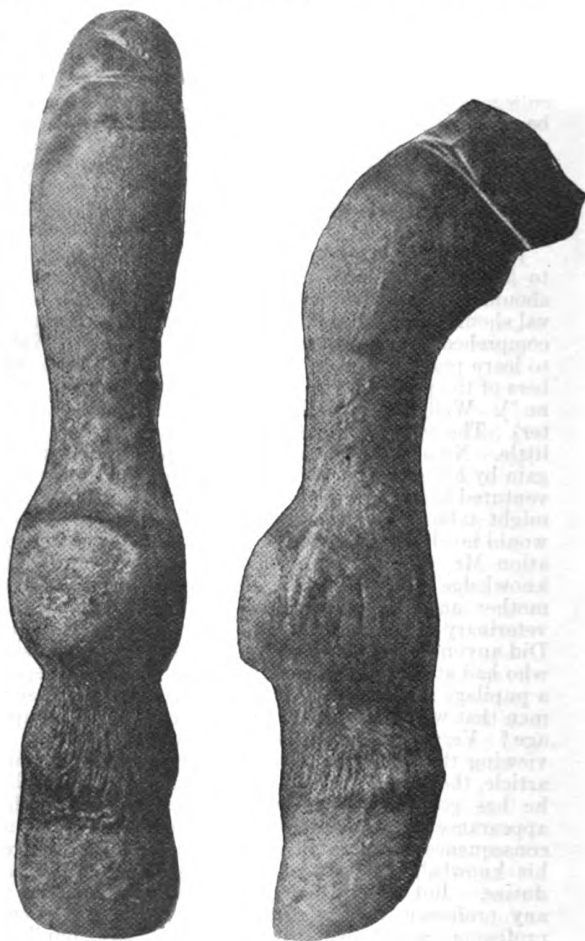
The defendant, on oath, said that he had practised as a horse doctor all his life, but had never held himself to be a veterinary surgeon. He had attended horses belonging to various noblemen in Ireland and also for a large number of people in the neighbourhood. About the middle of August he was called in to see the mare in question. Witness detailed his treatment of the wound, which seemed to go on well—he attended the animal twice a day. Subsequently Mr. Troke informed him that the mare had been out—he (defendant) had told him not to let the animal out—and when he saw it again it was very lame. Witness endeavoured to get the inflammation down, but the mare got worse after it had been let out. If the horse had been treated as he said it should have been treated he could have got it all right. Witness disagreed with the opinion that the horse should have been shot. He treated her properly, and she did not have an open joint. When the animal was shot it fell down and that created the open joint.

Cross-examined, witness said that he always lanced joints when they required it.

George Thomas Walley, Winton, coal merchant, said that defendant had attended his horses for twelve to thirteen years and given perfect satisfaction. Witness had never had to complain as to the defendant's lack of

attention to horses or that horses in his care had died. He had a very high opinion of the defendant's ability.

Mr. Salt, on behalf of the defendant, said that whilst the mare was under the defendant's care Mr. Troke let it out, either by accident of design, contrary to instructions. The horse through that got worse, but the probability was that if it had not been let out it would have got perfectly well. He referred to the high reputation of the defendant, who had considerable knowledge in treating animals, and said there was nothing to stop him carrying on work as a horse doctor. Mr. Salt urged that as the defendant had said, the open joint was caused by the horse falling down after it was shot, and that there was no open joint from the start. It



R.S.P.C.A. *versus* HAZELWOOD.

might be the defendant acted with some want of judgment, but his (Mr. Salt's) case was that the defendant did what he ought to have done. There was a wide difference of opinion between veterinary surgeons as to the treatment of cases. If the defendant was convicted it would be not only for cruelty, but it would have the effect of stopping his career. Unless the Bench were satisfied there had been wilful cruelty he submitted in law the defendant was entitled to the dismissal of the case. There had been no intentional cruelty on the part of the defendant, and even if the magistrates were satisfied that a great error of judgment had been committed—which had not been proved—there should be no conviction.

The Chairman, after the magistrates had consulted in private, said the Bench had no alternative on the evidence given but to convict, yet they did not convict the defendant of wilful cruelty. They thought that the animal was caused needless suffering by the defendant not giving proper and necessary treatment. They imposed a fine of 40s., and allowed £1 1s. veterinary surgeon's fee.—*The Guardian*, Bournemouth.

Charge against a Veterinary Surgeon— alleged failure to notify Swine Fever.

William Morgan Scott, F.R.C.V.S., of Bridgwater, was charged that he being a veterinary surgeon who in his private practice was employed to examine certain swine, the property of Edwin Heal, and suspecting the existence of disease, to wit, swine fever, unlawfully did not with all practicable speed give notice of the suspected existence of the disease to an inspector of the local authority of the said county and also to a constable of the police force for the police area in which the animals were, in contravention of the Animals (Notification of Disease) Order of 1910, at Wembdon, on the 20th August.

Mr. F. W. Bishop appeared for the prosecution, and and Mr. Freeman Barrett, barrister (instructed by Mr. C. P. Clarke, solicitor, of Taunton, appeared for the defendant, who pleaded not guilty.

Mr. Bishop appeared on behalf of the Chief Constable of the county to prosecute. The charge was shortly, that defendant suspecting the disease of swine fever did not notify to the police. The inspector to the local authority was Mr. Supt. Williams, and the penalty for not giving the notice under the Act was £5 per animal, while the onus of proving to the Bench was on Mr. Scott, that he did not know and could not have known the existence of the disease. The Bench would have evidence given them that there were definite signs of swine fever, signs that would at once lead to any farmer and more particularly a veterinary surgeon to come to the conclusion that the pigs were suffering from swine fever or that he suspected them to be suffering from swine fever, because if Mr. Scott suspected swine fever he must notify it. The signs were the pigs appeared to be dull, laid under cover, were disinclined to move, had constipation, followed by diarrhoea, watery eyes, and staggering. If pigs were affected in this way and one or more of the pigs died he (Mr. Bishop) was going to suggest that that would lead one, more particularly a veterinary surgeon, more definitely to suspect swine fever, and for this reason, an animal having died and not being able to tell what was the matter with it he could quite easily have had a post-mortem examination and satisfied himself beyond all doubt that it was swine fever. The facts were: Mr. Edwin Heal had some pigs on his farm, and at the beginning of August he noticed some of them were ailing. On the 19th August he wrote a post card to Mr. Scott saying that his pigs were suffering from something and requested him to come out. Mr. Scott went on the following day and was told that one pig had died and was buried, one was lying dead and he saw it, another was only just alive, and five or six were affected and only just able to crawl about. Mr. Scott looked at pigs and prescribed for them and also went and looked at the dead pig which had not been buried. For some reason or other—he (Mr. Bishop) must leave the Bench to judge the reason—Mr. Scott advised Mr. Heal to bury the dead pigs down deep. Mr. Scott gave the pigs what Mr. Heal would describe as a white powder. Mr. Scott was seen again by Mr. Heal on the 24th and 25th August, and he was then informed that the pigs were not getting any better, and on the 25th, for a reason which he (Mr. Bishop) need not go into at present, Mr. Bovett, a veter-

inary surgeon and also an officer of the Board of Agriculture was called in. Mr. Bovett took the precaution of having these pigs which had been buried dug up, and portions of these pigs were sent to and examined by the Board of Agriculture, and he (Mr. Bishop) would put in the certificate of the Board, from which the Bench would see there was no doubt that these pigs which had died were suffering from swine fever. It was only fair to Mr. Scott to say that he suggested that these pigs were suffering from poisoned meal. Why did not Mr. Scott take some of the meal away and have it examined and then he would have satisfied himself as to the meal, and in many ways it would have been better if he had done so. Mr. Scott asked Mr. Heal if he had ever had swine fever on his premises, and Mr. Heal replied, no, as far as he knew. The total number of pigs on the premises were 47, and nine or ten of these died and the rest were afterwards slaughtered. Amongst these pigs, although in a separate building, were eleven fat pigs, and Mr. Heal asked Mr. Scott if he might dispose of these to the butcher. If Mr. Scott had no suspicion that they were suffering from swine fever, he would have replied "I don't see any reason why not," but he told him he must not, thus showing there was a suspicion in his mind, and it would be a serious matter if he let them go off the premises. In the course of the conversation between Mr. Scott and Mr. Heal an extraordinary conversation took place, and it was a conversation that Mr. Heal could not invent because he would know nothing about it. Mr. Scott gave him an intimation that even if it was swine fever, and he thought it might be, that it could be cured.

Mr. Barrett interposed and asked whether it would not be better if they had the actual conversation that took place, without any comments by Mr. Bishop upon it. It was a quasi-criminal prosecution against a professional man.

Mr. Bishop replied that he was entitled to put before the Bench the facts and he would not say a word that he had not in his brief and which he could not prove. He was only going to say that Mr. Scott did refer to the curing of these pigs with serum and he also referred to Holland, as to where the serum came from, but that it was very expensive. He (Mr. Bishop) believed it was a fact that there was a serum being tried not only in Holland, but in this country, to see if something could not be done in regard to the treating of this disease. He mentioned these things to show that it appeared that Mr. Scott either did know or suspected that it was swine fever that these pigs were suffering from.

Supt. W. H. Williams was then sworn and he stated that he was an inspector of the local authority under the Diseases of Animals Act. He did not receive after the 20th August any notice from Mr. Scott that he was suspicious of swine fever on Mr. Heal's farm. He received a notice from Mr. Bovett with regard to the same farm and in consequence he immediately communicated with the Board of Agriculture by telegram. On the next day he served the necessary notices. He saw some of the pigs there and he had no reasonable doubt in his mind that they were suffering from swine fever as they exhibited the usual symptoms. In the last four years they had had in this district forty outbreaks of swine fever and 500 pigs had died or been slaughtered. He produced the certificate of the Board of Agriculture with regard to the examination of portions of carcasses of five pigs which had died and this certificate stated that they had the characteristic symptoms of swine fever and were at the time of death affected with the disease. Witness took a written statement from Mr. Heal on the following Saturday and he signed it.

In cross-examination, witness said he examined the pigs five days after Mr. Scott had seen them. The farm where the pigs were was in rather an isolated district and not near the main road, on which pigs would be likely to pass. He had had many cases of suspected

swine fever in the district, in which examination had not confirmed the suspicion. Appointed some years ago as an inspector of the Board of Agriculture in that district and still held the appointment, but for some time past he had not acted, another person being appointed. He knew that Mr. Scott was consulting veterinary surgeon for the county. He did not know that Mr. Scott had devoted considerable attention to bacteriological work. He did not suggest that it was easy to diagnose swine fever in many cases. He agreed that Mr. Scott was entitled as a professional man to use his discretion, and he did not suggest that he had done anything personally wrong.

Mr. Barrett: You impute no improper motives to Mr. Scott?—Witness: He never has notified swine fever.

That is not an answer to my question—you impute no improper motive to Mr. Scott?—No, certainly not.

Do you impute negligence in his professional duties in this case?—There seemed very great neglect in not reporting this.

Then you do impute negligence?—As far as Mr. Scott goes.

Do you impute incompetence to Mr. Scott?—No.

In further cross-examination, witness said he knew that Mr. Scott would get 2s. 6d. for every case of swine fever he notified, and that therefore it would be to his own advantage to notify cases, whilst as a veterinary surgeon it would be his desire to stamp out swine fever in the district.

Edwin Heal, of Waldron's Farm, Wembdon, was then sworn and gave evidence as to the illness of his pigs. On the 17th August one pig died, and between then and the 20th he noticed that some of the other pigs seemed to be ailing and all became affected. They were scoured, rambling and blinded. He sent a postcard to Mr. Scott asking him to come and see them as they were weak and rambling. Mr. Scott came the next day. The pig that had died he buried before Mr. Scott arrived, and he showed him another which was dead. Another was dying and two or three others were weak, but the rest could walk about. He told Mr. Scott that he had buried one pig. Mr. Scott examined the unburied pig that was dead and advised him to bury that one deep. Mr. Scott brought some medicine with him. The next day witness came in and saw Mr. Scott and told him that the pigs were no better and he gave him a white powder for them. He saw Mr. Scott again on the 24th August at Huntspill and told him that no more of the pigs had died, but that those affected were no better. Mr. Scott told him to call at his house on the way back and take home some medicine. Witness told him that he had eleven fat pigs and asked if he could remove them, and he said he had better not, as he did not know what it would develop to. Mr. Scott said that the pigs were poisoned by the barley meal they had had, but he did not take away any meal with him. Mr. Bovett came on the 24th August and the carcasses of the dead pigs were taken up for him. Mr. Bovett had three more of the pigs killed. Witness saw Mr. Scott the next day and told him that Mr. Bovett had been to the farm and that he had suspected swine fever.

Mr. Bishop: What did Mr. Scott reply?—Witness: I don't remember.

Since the case has been launched have you had an interview with Mr. Scott?—Yes, I have seen him and spoken to him.

About this case too?—Yes.

Has someone else been to you as well since this case was launched?—Yes, Mr. Williams.

Mr. Barrett: He has been seen by both sides.

Mr. Bishop (to the witness): Did you give a written statement to Mr. Williams?—Witness: Yes.

Mr. Bishop: Was that statement correct?

Mr. Barrett objected, contending that Mr. Bishop must not treat his own witness as a hostile witness.

Mr. Bishop said he was not treating the witness as a hostile witness yet, and proceeded to ask the witness if he signed the statement in the presence of Supt. Williams?—Witness: Yes.

Mr. Bishop: Did that statement which you signed contain something different to what you are saying to-day?

Mr. Barrett: I submit that the witness need not answer that question.

The Magistrates retired, and on returning into court the Chairman announced that they would allow the witness to be treated as a hostile witness.

Mr. Bishop (to the witness): Did you tell Mr. Scott that Mr. Bovett said it was a case of suspected swine fever?—Yes, sir.

Did he say in reply to it, "I have no doubt it is a case of suspected swine fever aggravated by the poisoned meal."—I am not certain on that point.

Have you talked this over with Mr. Scott since these proceedings were taken?—Yes, sir.

Did Mr. Scott send for you to come in?—Yes.

And you discussed this case with him?—Yes, sir.

Did you sign the statement that Mr. Supt. Williams took down?—Yes.

When you signed that statement it was true?—To the best of my knowledge.

Mr. Williams took down that statement within two or three days of when Mr. Bovett had been to your premises?—Yes.

You were more likely to remember what was correct then than you would two or three weeks afterwards?—I suppose so.

The Magistrates' Clerk (Mr. E. Trevor) read the following extract from the statement:—"I then told him (Mr. Scott) that Mr. Bovett had been out and seen the pigs and he considered it suspicious of swine fever. He replied he had no doubt but that it was swine fever aggravated by poisoned meal. When Mr. Scott came to my place he told me that the pigs were poisoned and he thought they were poisoned by the barley meal."

Did Mr. Scott tell you anything about serum?—Yes, that it was possible to cure it with serum.

Did he say where the serum was being used?—I believe he said it was done in Holland.

Did he say whether it was expensive or not?—He said it would be expensive at present.

Cross examined by Mr. Barrett, witness said it was not true to suggest that any improper suggestion was made to him by Mr. Scott, and witness had not come there that day to say what was not true. When witness sent the postcard to Mr. Scott he did not say anything in it about swine fever. When Mr. Scott arrived the pig that was dead was stinking and he told him to bury it deeply. Mr. Scott asked him where the meal was kept, and asked him if it was foreign or English meal. Mr. Scott asked him to remove the trough in the shed and not to use any more of the barley meal but to give them a light nutritious bran and whey. Mr. Scott proceeded to the dry meal and made a careful examination of it and said he had come to the conclusion that there was some fungoid development in the meal and that it would give rise to the diarrhoea trouble. Mr. Scott asked him if he had bought any fresh meal within the last few days and he told him he had. He also asked him if he had ever had swine fever on his farm, and he told him "No." Mr. Scott was so convinced that there was something wrong with the meal that he advised him to go and see the vendor. Witness did so and told him what Mr. Scott had said.

Mr. Edwin W. Bovett, veterinary surgeon, of Bridgewater, said he was one of the inspectors of the Board of Agriculture. On the 24th August he visited the premises of Mr. Heal and examined some pigs there. There were four dead and they had been buried. He had three of them dug up and took away portions of them. He

was satisfied from observations that it was a case of swine fever. In consequence he communicated with Supt. Williams. Witness was instructed to make an examination on behalf of the Board of Agriculture. On his second visit eight other pigs were showing signs of swine fever and their temperature was 108. Eleven fat pigs were apparently healthy.

In cross-examination witness said he agreed that swine fever was very subtle in its development and had defied the efforts of the Board of Agriculture and all local authorities to suppress it. An animal that might appear perfectly healthy might be suffering from it and another animal that was ill might not. The Board of Agriculture had gone as far as to say that in any cases of suspected swine fever, portions of the carcass were to be sent to them for bacteriological examination in order that the suspicions might be confirmed.

Mr. Barrett: Are you going to say because you were able to detect swine fever on the 24th August that Mr. Scott ought to have detected it on the 20th?—Yes, in this case.

Are you making a suggestion that Mr. Scott was careless or acting erroneously in not making a post-mortem examination of that stinking pig on the 20th August?—I can't say.

Capt. James Brand, F.R.C.V.S., an inspector on the permanent staff of the Board of Agriculture, stationed at Bristol, deposed that on August 28th, he was instructed by the Board to visit Mr. Heal's place, and found a number of pigs showing clinical symptoms of swine fever. He instructed a valuation to be taken of the pigs affected. The symptoms described by Mr. Heal and Mr. Bovett were such as to make it at once suspected that swine fever existed in some form or other.

Mr. Edwin Bryant, corn and meal merchant, of East-over, was called. He said he supplied the barley meal referred to in this case to Mr. Heal. It was freshly ground meal and dry, and he had supplied from the same meal a large number of farmers and had had no complaint.

DEFENCE.

Mr. Barrett said Mr. Scott was well known in Bridgwater, and certainly was respected by his professional brethren. He was a man of high reputation, and would be the last to endeavour to suppress to the authorities an outbreak of swine fever. Not only would Mr. Scott by such an action incur the disfavour of everyone in the district, but he would be obviously removed from the register of the Royal College of Veterinary Surgeons and would be dismissed from the profession which he adorned. With regard to Supt. Williams, it was indicative of a police prosecution that a man desired to do his best, and while he (Mr. Barrett) appreciated to a certain extent that Supt. Williams must receive the confidence of the Bench, he was quite sure on the other hand that while not favouring him they would take care that in this very grave matter Mr. Scott received the amplest justice at their hands. Mr. Scott had done considerable work from the bacteriological aspect, and had written a book, in which he had devoted a chapter to the question of serum treatment of swine fever. Mr. Scott had been advocating the use of serum in swine fever cases for many years, and in the last report issued by the Board of Agriculture they had come round partly to this treatment, and agreed that although the serum treatment might not arrest the disease from starting yet it might lessen its effect and prevent its mortality. A veterinary surgeon was like a medical man, and both were protected by special statutes. A medical man or a veterinary surgeon in carrying out the work of his profession was entitled to exercise his judgment. Mr. Williams had said that he did not suggest that Mr. Scott did anything wrong intentionally. A mere error of judgment was not sufficient to convict a veterinary surgeon; he must do something that showed an evil

intent, an intention to over-ride the law. He submitted there was not the slightest evidence of Mr. Scott having done anything of the kind in this case. Mr. Bovett gave his evidence most fairly and admitted that he could not tell from the inspection on the 24th what was the condition of things on the 20th. Learned counsel said he was not going to rely on Mr. Scott's evidence alone; he was going to call a number of eminent veterinary surgeons, who would tell them that often a veterinary surgeon had to pay six visits before he could make up his mind that there was a suspicion of swine fever. In the last report of the Board of Agriculture out of 247 cases of suspected swine fever reported to them 62 were found not to be swine fever. He (learned counsel) did not think his friend Mr. Bishop had been quite fair to the man Heal. Of course Heal saw Mr. Scott after this case began, he (counsel) did not see anything in it. Mr. Scott was as much entitled to see Heal as any local officer of the Board or Supt. Williams was. Something had been said as to why Mr. Scott did not make a post-mortem examination of the pig that had died, but veterinary surgeons seldom resorted to these post-mortem examinations in the case of decomposed carcasses. Even supposing the Bench thought Mr. Scott had made a mistake he did not think it was likely that they would convict him and so cause his removal from the register of the Royal College of Veterinary Surgeons, but should they do so he must take such steps as to ensure the restitution of his position in his profession.

Mr. Bishop said he presumed counsel had no authority of the College for saying that if Mr. Scott was convicted he would be removed from the register.

Mr. Barrett said that he happened to have been president of the College and now sat on the registration committee of that body, and he could only say that they had constantly had gentlemen removed for offences much less serious than the offence alleged against Mr. Scott.

Mr. Scott was then sworn and stated that he had practised in Bridgwater fifteen years and was one of the county inspectors under the Contagious Diseases Animals Acts, and consulting veterinary surgeon for the county of Somerset. He was called in to see the pigs on Mr. Heal's farm and he took the temperature of the animal that appeared to be the worst and it was 102½, which was more or less normal. That obliterated any idea of the possibility of swine fever being in existence. He asked his client what he had been feeding the pigs on and he replied bran and whey. He asked him if it was foreign bran and he replied that he believed it was. Witness said, "Have you had any fresh consignment of barley meal?" He replied, "Yes," and witness said, "Tell me on what day you saw the pigs ill," and he replied, "Two or three days after the fresh consignment had been delivered." Witness asked him if he might see the meal, which he did, and on the basis of what he saw he came to the conclusion that these pigs were suffering from a condition which he had seen in previous experience, due to the fungus which was not at all uncommonly found in foreign barley. He examined the food in the trough and asked Mr. Heal to remove that entirely. He said, "What shall I do with the rest of the barley?" Witness suggested that at the present time he should not give the pigs any barley and ordered a fresh, light and easily digested food. He also suggested to Mr. Heal that in his own interest he should consult the vendor of the barley and get his expression of opinion on the point. Mr. Heal asked him if he could remove eleven pigs, and witness said, "At the present juncture I should not advise you to do so, as it would be indiscreet." Witness was there to study Mr. Heal's interest, and he (Mr. Scott) had to study his own professional reputation, and if anything at a later date had occurred he did not want any reflection to be made on his reputation as being careless or indifferent and he

exercised caution. He only suggested that Mr. Heal should bury the pig deeply for hygienic reasons. On the 20th he had not the slightest suspicion of swine fever. He prescribed medicine, which was distinctly wrong for swine fever, as there was no remedy suitable for swine fever at all, except the serum treatment, in which he had great faith. He saw Mr. Heal again on the Saturday night and he said the pigs were about the same, and he gave him more medicine. Mr. Heal called again on the Tuesday, and he suggested the possibility of giving a course of medicine to the whole of the pigs. He told him that he had been so frightfully busy over military duties, that he was not able to see the pigs on the Monday, but he hoped to see them on the Wednesday afternoon. Mr. Heal told him that Mr. Bovett had been and seen the pigs and advised reporting it as suspicious of swine fever. He said, "If it is swine fever it is aggravated by the barley meal." If he had had the opportunity of paying another visit to the pigs he might have come to the conclusion that there were suspicions of swine fever.

In cross-examination, witness said he admitted now that the pigs were suffering from swine fever. He advised Mr. Heal not to remove the eleven pigs and dispose of them because swine fever was a subtle disease and he had seen this case to begin with with a view to seeing it again. Mr. Heal told him when he came to see him that the pigs were no better.

Prof. Geo. H. Wooldridge, Professor of Veterinary Science at the Royal Veterinary College, London, said he had known Mr. Scott for some years, and had a high opinion of him as to his professional attainments and abilities. It was very difficult indeed to distinguish outbreaks of swine fever. If he found a pig with a temperature of 102½ he should not in the least suspect swine fever. Having heard the whole facts he considered that Mr. Scott was justified in the action he took and it was a line of action he should in all probability have taken himself.

Mr. Lancelot Whale, M.R.C.V.S., of Weston-super-Mare, said for 22 years he had a large professional practice in Gloucester, and he agreed generally with the conclusions that Mr. Scott and Professor Wooldridge had formed, and he would have done what Mr. Scott had done.

Mr. Chas. Delacherois, of Sandford, near Weston-super-Mare, and Mr. Robert Sydney Penny, of Tiverton, veterinary surgeons, gave similar evidence.

The Bench retired, and on their return the Chairman said they had been carefully into this very serious charge and the majority were in favour of dismissal, but the fact that the Bench were divided showed that the case was very serious. The Bench thought he should mention that they considered it would be advisable in future that more care be taken in cases of this kind.—*The Independent*.

A NEW MILITARY VETERINARY JOURNAL.

We have received the first number of a new Spanish journal, *Revista de Veterinaria Militar*, which, as its name denotes, is exclusively devoted to army veterinary work. It is to appear monthly; and the first number is dated October 31. Needless to say, the major part of military veterinary work is directly applicable to civil practice; and if this new journal fulfils the promise of its first number, it will be a publication of considerable interest to all civilian practitioners who can read Spanish.

The number comprises 44 pages of literary matter. Scarcely a third of this space is devoted to notes and news strictly pertaining to the Spanish army; the rest is made up of matter which appeals to the whole profession, civil and military alike. There are several good

long articles, among which we may mention an illustrated one by a Spanish army veterinary surgeon upon biological tests for tuberculosis, and a translation of a comprehensive French essay upon intramuscular injections in the horse. In addition, there are quite a large number of summarised abstracts—arranged in sections according to their subject matter, and equally representing both the laboratory and the clinical side of veterinary science—from the professional journals of various countries. French, German, Austrian, Spanish, English, and Hungarian journals are all represented; and the net result is that this first number probably contains about as large an amount of interesting professional matter as could be found in any monthly veterinary journal published in October.

The director of the journal is Sen. Manuel Medina, a veterinarian, aided by an editorial staff of thirteen army veterinary officers. The journal is published at Toledo, at the Imprenta y Libreria de Viuda e Hijos de J. Peláez, Comercio. 55; and the annual subscription is 10 pesetas. Correspondence should be addressed to D. M. Medina, en la Compania Mixta de Sanidad de Ceuta. We wish the new venture all the success which the contents of its first number augur for it.

W. R. C.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Nov. 19.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temp. Lieut. :—C. C. Clark, dated Nov. 8.

Nov. 20.

Cpts. to be temp. Majors whilst holding appmnt. of Commdt. of a School of Farriery :—A. S. Lawrie, A. B. Mattinson, Special Reserve, dated Aug. 23.

Temp. Lieuts. to be temp. Captains :—A. B. Holland, G. C. Harding, dated Nov. 6.

Nov. 22.

To be temp. Lieuts. :—P. D. Reavy, dated Nov. 10.

Nov. 23.

The following temp. appmnts. are made at the War Office :—Asst. Director-General—Capt. J. W. Rainey, Res. of Officers, from Deputy Asst. Director-Gen., and to be temp. Major while so employed, *vice* Major A. G. Todd, A.V.C., dated Nov. 7.

Deputy Asst. Director-Gen.—Capt. P. D. Carey, A.V.C., *vice* temp. Major J. W. Rainey, Res. of Officers, dated Nov. 17.

Temp. Lieuts. to be temp. Cpts. :—H. H. Fetherstonhaugh, dated Nov. 7. G. H. Pollock, dated Nov. 10. Temp. Lieut. H. S. Jones relinquishes his commission on the termination of engagement, dated Nov. 24.

Nov. 24.

Temp. Lieut. to be temp. Capt. :—A. Ellison, dated Nov. 6.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Nov. 22.

To be Capt. :—Lieut. J. P. Heyes, dated Nov. 18.

To be temp. Lieuts. :—J. R. Conchie, dated Oct. 16. J. L. Taylor (Nov. 23.)

The following casualty in the Mediterranean Expeditionary Force is reported :—

DIED—Pte. J. Langston, 5414.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Swine Fever.		
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Sheep Scab.	Out-breaks	Slaughtered.
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended November 20	10	10	2	49	6	8	22	47	3	66	220
Corresponding week in											
1914 ...	9	9					†	†	10	103	576
1913 ...	20	23			1	1	29	45	5	57	413
1912 ...	6	6			3	7	41	64	14	49	785
Total for 47 weeks, 1915	514	581	40	321	47	82	1744	11606	177	3652	15586
Corresponding period in											
1914 ...	650	711	24	124	90	271	1530	12642	180	3968	37284
1913 ...	510	562	1	23	136	329	2180	4303	163	2272	29059
1912 ...	681	763	92	639	164	303	2594	5460	238	2672	36674

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked: Kent 1, Middlesex 1, Stafford 3, York, West Riding 2, Lanark 1.

Board of Agriculture and Fisheries, Nov. 23, 1915

|| Figures for thirty-four weeks only.

IRELAND.	Week ended Nov. 20	...	...	...	...	...	Outbreaks	9	3	12
Corresponding Week in {	1914 ...	...	...	...	...	...	1	6	1	...
	1913 ...	...	...	...	...	...	1	13	1	25
	1912 ...	...	...	...	...	...	...	11	1	2
Total for 47 weeks, 1915		...	2	2	1	3	65	371	227	1292
Corresponding period in {	1914 ...	1	1	76	957	73	450	182	917	
	1913	1	1	112	461	129	855	
	1912 ...	3	3	68	382	59	324	202	1633	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Nov. 22, 1915
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

Veterinary Societies—Addresses.

BORDER COUNTIES V.M.S.

Pres: Mr. H. Barrow, M.R.C.V.S., Ireby, Carlisle
Hon. Sec: Mr. R. Craig Robinson, M.R.C.V.S., Carlisle
Meetings, Second Friday of Feb., June, and October

GLASGOW V.M.S.

Pres. Principal McCall.
Hon. Sec. Mr. J. D. Fulton, 83 Buccleuch Street, Glasgow

ROYAL VETERINARY COLLEGE V.M.A.

Pres: Prof. E. Brayley Reynolds.
Hon. Sec: Mr. B. Gorton, M.R.C.V.S. Assist. Mr. P. R. Turner

ASSOCIATION OF VETERINARY OFFICERS OF HEALTH

Pres: Mr. T. Douglas, M.R.C.V.S., Kilmarnock
Hon. Sec. & Treas. Mr. A. M. Trotter, M.R.C.V.S.,
Moore Street, Abattoir, Glasgow

NATIONAL ASSOCIATION OF VETERINARY INSPECTORS

Pres: Mr. J. Abson, F.R.C.V.S., Sheffield
Hon. Sec: Mr. Trevor Spencer, M.R.C.V.S., Kettering

MUNSTER VETERINARY INSPECTORS' ASSOCIATION

Pres: Mr. D. M. Barry, M.R.C.V.S., Mallow
Hon. Sec: Mr. T. I. Alexander, M.R.C.V.S., Kinsale

NATIONAL VETERINARY BENEVOLENT & MUTUAL DEFENCE SOCIETY.

Pres: Mr. W. A. Taylor, F.R.C.V.S., Brick-st, Manchester
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Grosvenor Street, Oxford-st., Manchester
Treas: Mr. J. B. Wolstenholme, F.R.C.V.S.,
Quay-street, Manchester

VICTORIA VETERINARY BENEVOLENT FUND.

Pres. Mr. S. H. Slocock, F.R.C.V.S., Montague Rd, Hounslow
Hon. Sec. & Treas: Mr. W. Shipley, F.R.C.V.S.,
South Town, Great Yarmouth

COLONIAL SOCIETIES.

VETERINARY ASSOCIATION OF NEW SOUTH WALES.

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V. Pres: Maj. A. P. Gribben, F.V.O., M.R.C.V.S.
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56 Bridge Street, Sydney

BRITISH COLUMBIA V.M.A.

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PROVINCE OF QUEBEC V.M.A.

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For Saskatchewan, Alta.

ONTARIO V.A.

Pres: Mr. J. H. Tennent, v.s., London, Ontario
Sec. & Treas: Mr. L. A. Wilson, Toronto, Ontario

TRANSVAAL V.M.A.

Pres: Mr. C. E. Gray, F.V.S., Box 134, Pretoria.
Hon. Sec: Mr. P. Conacher, g.v.s., Box 877, Johannesburg

CAPE OF GOOD HOPE V.M.B.

Pres. Mr. J. D. Borthwick, M.R.C.V.S., Cape Town
Hon. Sec. & Treas. Mr. J. W. Crowhurst, F.R.C.V.S.,
Longmarket Street, Cape Town

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Pres: Dr. W. R. Taylor, Portage la Prairie
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Pres. Mr. F. J. Carless, M.R.C.V.S., Mooi River
Hon. Sec. & Treas. Mr. A. Goulé, Eshowe, Zululand

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11 Anchor Terrace, Southwark Bridge, S.E.*Treas.* : Prof. G. H. Wooldridge, F.R.C.V.S.,
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71 Smithdown Lane, Liverpool**LANCASHIRE V.M.A.***Pres.* : Mr. G. H. Locke, M.R.C.V.S.,
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Town Hall, Manchester*Hon. Treas.* : Mr. E. H. Stent, M.R.C.V.S., Preston-st, Hulme
Meetings, 1st Thursday in April, June, Sept., & Dec.**LIVERPOOL UNIVERSITY V.M.S.***Pres.* : Mr. J. P. Heyes, F.R.C.V.S., Wigan*Hon. Sec.* : Mr. A. Walker, F.R.C.V.S., Mill Lane, West Derby
Pathological Sec. : Mr. D. C. Matheson, F.R.C.V.S.*Meetings*, May, July, October, January.**MIDLAND COUNTIES V.M.A.***Pres.* : Mr. J. Malcolm, F.R.C.V.S., Birmingham*Hon. Sec.* : Mr. H. J. Dawes, F.R.C.V.S.,
Camden House, High-st., West Bromwich*Hon. Treas.* : Mr. J. J. Burchall, M.R.C.V.S., Barrow-on-Soar
Meetings, Second Tuesday, Wednesday, Thursday, and
Friday alternately in Feb., May, Aug. and Nov.**NORTH OF ENGLAND V.M.A.***Pres.* :
Hon. Sec. : T. T. Jack, M.R.C.V.S., 8 Elmwood-st, Sunderland
Meetings, Third Friday, Feb., May, Aug. and Nov.**NORTH MIDLAND VETERINARY ASSOCIATION***Pres.* : Mr. M. Robinson, M.R.C.V.S., Barnsley*Hon. Sec.* : Mr. J. S. Lloyd, F.R.C.V.S., Sheffield**NORTH WALES V.M.A.***Pres.* : Mr. Hugh Williams, M.R.C.V.S., Ty Croes
Hon. Sec. : Mr. L. W. Wynn Lloyd, M.R.C.V.S., Carnarvon
Meetings, First Tuesday, March and September**SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.***Pres.* : Mr. J. M. Walker, F.R.C.V.S., Hartlepool*Hon. Sec. & Treas.* : Mr. F. H. Sanderson, M.R.C.V.S.,
Victoria Road, Darlington
Meetings, First Friday, Mar., June, Sept. and Dec.**YORKSHIRE VET. ASSOCIATION***Pres.* : W. Crawford, M.R.C.V.S., 155 Woodhouse Lane, Leeds*Hon. Sec.* : Mr. J. Clarkson, M.R.C.V.S., Garforth, nr. Leeds
Hon. Treas. : Mr. A. McCarmick, M.R.C.V.S.,
Kirkstall-road, Leeds**Southern Branch:***Pres.* : Mr. W. R. Davis, M.R.C.V.S., Chase Side, Enfield*Pres.* : Sir Stewart Stockman, 4 Whitehall Place, S.W.*Sec.* : T. C. Toope, 34 High Street, Dover**CENTRAL V.S.***Hon. Sec.* : Mr. H. A. MacCormack, M.R.C.V.S.,

122 St. George's Avenue, Tufnell Park, N.

Meetings, First Thursday in each month, except August
and September, 10 Red Lion Square, Holborn, at 7 p.m.**EASTERN COUNTIES V.M.A.***Pres.* : Mr. T. E. Barcham, M.R.C.V.S., Paston, Norfolk*Hon. Sec. & Treas.* : Mr. A. C. Holl, M.R.C.V.S.,
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Long Stanton, Cambridge
Boston Road, Sleaford*Meetings*, Second Thursday Feb., June, and October**ROYAL COUNTIES V.M.A.***Pres.* : Mr. J. C. Coleman, M.R.C.V.S., Swindon*Hon. Sec. & Treas.* : Mr. G. P. Male, M.R.C.V.S., Reading*Meetings*, Last Friday, Jan., April, July and Nov.**SOUTHERN COUNTIES V.S.***Pres.* : Mr. G. H. Livesey, M.R.C.V.S., Hove, Sussex*Hon. Sec.* : Mr. A. H. Archer, M.R.C.V.S., Southsea, Portsmouth*Hon. Treas.* : Mr. E. W. Baker, M.R.C.V.S., Wimborne*Meetings*, Last Thursday, Mar., June and Sept.**SOUTH EASTERN V.A.***Pres.* : Mr. E. Lyne Dixon, M.R.C.V.S., Margate*Hon. Sec. & Treas.* : Mr. Theo. C. Toope, M.R.C.V.S.,
84 High Street, Dover**WESTERN COUNTIES V.M.A.***Pres.* : Mr. W. Roach, F.R.C.V.S., York Road, Exeter*Hon. Sec.* : Mr. W. Ascott, M.R.C.V.S., Bideford*Hon. Treas.* : Mr. P. G. Bond, M.R.C.V.S., Plymouth*Meetings*, Third Thursday, March, July and November**Irish Branch:***Pres.* : Mr. A. Watson, Municipal Buildings, Dublin*Sec.* : Mr. P. D. Reavy, Leafield, Bundoran, Co. Donegal**CENTRAL V.A. OF IRELAND.***Pres.* : Mr. B. P. J. Mahony, M.R.C.V.S., Maryborough*Hon. Sec.* : Mr. E. C. Winter, F.R.C.V.S., Queen-st., Limerick*Treas.* : Mr. J. F. Healy, M.R.C.V.S., Middleton**CONNAUGHT V.M.A.***Pres.* : Mr. D. Hamilton, M.R.C.V.S., Ballina*Hon. Sec. & Treas.* : Mr. A. J. Moffett, M.R.C.V.S., Galway**VET. MED. ASSN. OF IRELAND.***Pres.* : Mr. A. Watson, M.R.C.V.S., Dublin*Hon. Sec.* : Prof. J. J. O'Connor, M.R.C.V.S., R.V. Coll., Dublin*Hon. Treas.* : Prof. J. F. Craig, M.A., M.R.C.V.S.,
R.V. Coll., Dublin**NORTH OF IRELAND V.M.A.***Pres.* : Mr. W. Smyth, M.R.C.V.S., Newry*Hon. Sec.* : Mr. J. A. Jordan, M.R.C.V.S., Belfast*Hon. Treas.* : Mr. H. McConnell, M.R.C.V.S., Armagh**Scottish Branch:***Pres.* : Dr. O. Charnock Bradley,

Ryl. (Dick) Vet. Coll: Edinburgh

Hon. Sec. : Prof. A. Goffton, Municipal Buildings, Edin.**NORTH OF SCOTLAND V.M.S.***Pres.* : Mr. W. Marshall, M.R.C.V.S., Aberdeen*Hon. Sec. & Treas.* : Mr. G. Howie, M.R.C.V.S., Alford, Aberdeen
Meetings, Last Saturday in January and August**ROYAL SCOTTISH V.S.***Pres.* : Mr. Reid, M.R.C.V.S., Auchtermuchty.**SCOTTISH METROPOLITAN V.M.S.***Pres.* : Mr. J. Riddoch, M.R.C.V.S., Edinburgh*Hon. Sec. & Treas.* : Mr. Jas. Henderson, M.R.C.V.S.,

Public Health Dept., City Chambers, Edinburgh

WEST OF SCOTLAND V.M.A.*Pres.* : Prof. John R. McCall, M.R.C.V.S., Vety. Coll. Glasgow*Hon. Sec.* : Mr. J. F. Macintyre, M.R.C.V.S.,

19 Bank Street, Hillhead, Glasgow

Hon. Treas. : Mr. Geo. W. Weir, M.R.C.V.S.,

88 Crookston Street, Glasgow

Meetings, Second Wednesday, May, Oct. and January.

THE VETERINARY RECORD

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FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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RESEARCH AND ENDOWMENT.

This week we publish an abstract of some distinctly noteworthy researches upon the comparative resistance of human and bovine types of tubercle bacilli to daylight and drying. The investigation follows what appears to be a new line of research; its results are, to say the least, highly suggestive; and very possibly it may be a starting point leading to substantial additions to our knowledge of comparative pathology. It was carried out by two medical men, who deserve all credit for their work; but it will be seen that the whole of it could have been quite as well performed by veterinarians, provided they had specialised in bacteriology. Plenty of our members have done this; but very few, hitherto, have been able to undertake research upon other than strictly veterinary subjects, and even in those the amount of research done by veterinary surgeons is comparatively small. We all know the reason for this. Research costs money; for most of our history, hardly any money for the purpose has been available to us, and not much is available even to-day.

Good research work is being done by the Board of Agriculture, and its cost is borne by the State; but the scope of the Board's activities in this direction is necessarily rather limited. A much wider field of research lies ready for veterinary surgeons—part of it consisting of strictly veterinary subjects, which they alone are really competent to work upon, and part of questions of comparative pathology and general bacteriology, which they are quite as well fitted to deal with as medical men—but lack of funds prevents them from entering upon it. Much work is done by veterinary surgeons on the Continent, and a fair amount of late years in America; and we all know why so little has yet been done in England.

Abroad, ample funds for research are available to veterinary surgeons. Veterinary schools are State supported, much money is allocated to research, and many veterinarians are enabled to devote the whole or the major part of their time to research work alone. The well-known Continental predominance in veterinary research is simply the result of its long-continued encouragement by the Continental Governments. We have men here as good as any abroad—the quality of work they have done with their limited opportunities proves that—and the one thing necessary to place this country among the first in the world in veterinary work is State encouragement for research. To increase the State aid to veterinary research would be a move towards true national economy; for the money spent would more than return in the resultant benefit to agriculture.

PYELO-NEPHRITIS (COW).

Subject. Shorthorn cow five months advanced in pregnancy. She had had five calves previously. She gave birth to twins in March last year. I attended her on that occasion, and there was very little difficulty in bringing about delivery. She cleansed three hours after I had left, but I learnt from the owner after she died that he wasn't quite sure whether all the "cleanse" came from her, though he took and buried it himself. Had she lived to calve again she would have given birth to twins, as revealed by the post-mortem examination.

History. Owner sent for a drink for "redwater" on Nov. 1st, and for another on the 4th. I first saw her on the 7th, and she died on the 11th.

Symptoms. The most important was suppression of urine, loss of appetite, dullness, disinclination to move, preferring to lie down most of her time. She passed no faeces (except a double handful of dark coloured "frothy" stuff) during the eleven days of November whilst she was under special notice. Frequent and obviously painful attempts at micturition resulted in the discharge each time of about half a teacupful of thick blood-stained, purulent material, in which were three or four clots of blood, each about the size of a marble; temperature 102°, ears and horns cold, pinched appearance, back slightly arched.

Diagnosis. Nephritis. Not having seen such a case before that I can call to mind, I did not examine her per rectum for enlarged kidneys, which I might easily have done had I thought of it.

Treatment. Palliative. I considered the case hopeless.

Course of the disease. There was absolutely no change in the case during the 11 days, except that her temperature fell to 99.2°, and remained at that three days preceding death.

Post-mortem revealed both kidneys very appreciably enlarged, and each "enclosed" in a thick envelope of suet. The photo. is of the left one, which weighed 12½ lb. The right one weighed 10 lb., and was in a much more advanced state of disease. The above weights include the superimposed fat as described. The length of the left kidney alone was 13 inches.

Remarks. I was stupid enough not to examine the bladder at the post-mortem. The probability is that it was affected with cystitis. Professor M. Fadyean is of opinion that the mode of infection in this case is by way of the urethra, bladder, and ureters, and that is the reason I ascertained from the owner whether there was any retention of the placenta after her last parturition, and got an answer in the negative.

Professor Williams, in *Medicine*, says, "except for the irritation of a calculus, suppurative nephritis—pyelitis—is a very rare form of disease in the lower animals."

My pathology notes taken from Sir John's lectures give a full account of the cause, nature, and effects of pyelo-nephritis, but, of course, they do not describe the symptoms and so on, which more directly concern the ordinary practitioner like myself.

I sent the specimen to Professor McFadyean, who very kindly told me its pathological condition.

W. E. BLACKWELL, M.R.C.V.S.

Towcester.

OFFICERS, N.C.O.s. AND MEN OF ARMY VETERINARY CORPS, WEST RIDING DIVISION. (See Plate).

Standing (Back Row). From left to right: Corporal A. Singleton, Private Bradley, Shoeing-Smith Mackey, Privates Kelley, Taylor, Bedford, Fawley, Cooke, Stockdale, Hopkin, Stockton, Sykes, Winters, Corporal C. E. H. Yates.

Sitting (Middle Row): Private Dunning, Sergeant F. Baker, Capt. A. N. Foster, Lieut.-Col. A. W. Mason, Privates Clarkson, Batty, Redfearn, Driver Cahill.

Sitting (Front Row): Privates Baker, Linton, Driver Glew, Private Horeningham.

A PECULIAR FRACTURE.

Subject. Aged, light draught gelding.

I was asked to see this horse, which was suffering from slight lameness. On examination it was found that there was a very slight swelling, about the size of the palm of a hand, tender to the touch, and soft, five or six inches below the elbow joint at the outside of the limb.

Fomentation was recommended, and in the course of a few days the lameness was greatly aggravated; it was not very apparent that an abscess had formed, which on opening discharged white creamy pus.

Further careful examination the following day with a finger revealed a small displacement of bone and an open elbow joint, as there was a copious discharge of joint oil from the wound.

The limb was examined very carefully, but no crepitation was apparent.

Autopsy. Slaughter was advised. Fracture of top of radius into six or seven pieces, largest piece being four or five inches in length and one and a half inches in width, with suppurative of the capsule of the elbow joint.

On working up the history of the case, the important fact was ascertained that the horse had been kicked in the stables about a fortnight prior to my first examination.

This case appears very abnormal, as the acute lameness did not develop until a lapse of some fourteen days after the date of the attributable accident.

A. HOSKIN, Lieut. A.V.C.

25th November.

ABSTRACTS FROM FOREIGN JOURNALS.

THE ACENTROSOMIC VARIETIES OF TRYPANOSOMES ARTIFICIALLY PRODUCED.

A. Laveran, in collaboration with Ronsky, has recently investigated the effects produced by trypanasafrol upon the centrosomes of trypanosomes. The results (*C. R. Acad. Sci.* 1915, Vol. 160, p. 543), are as follows;—

In mice infected with *T. brucei* and treated with the drug in doses of 0.5 to 1.0 mg. per 20 g. body weight the centrosome entirely disappeared at the sixteenth passage, and this change persisted in subsequent passages although no treatment was given.

With *T. soudanense*, *T. gambiense*, and *T. rhodesiense* incomplete results were obtained, while *T. lewisi* and *T. duttoni* resisted the action of the drug.

A strain of *T. evansi* has been passed through 459 mice without regaining the centrosome.

The acentrosomic varieties appear to be less virulent than the normal trypanosomes, and the author suggests the possibility of using such varieties for the protective inoculation of animals against the ordinary strains.— (*Tropical Vet. Bulletin*).

A METHOD OF TRANSMITTING KNOWN NUMBERS OF TRYPANOSOMES, WITH A NOTE ON THE NUMERIC RELATION OF TRYPANOSOMES TO INFECTION.

J. A. Kolmer has published this note (*Jour. Infec. Dis.*, 1915, July, Vol. 17, No. 1, pp. 79-94). His method of ascertaining the number of trypanosomes present in a volume of blood is practically the same as that adopted for the enumeration of the total leucocytes. It simply consists in diluting the blood with a liquid which will kill and stain the trypanosomes, and at the same time render the red corpuscles invisible. It is necessary to make a preliminary examination of the undiluted blood so as to get a rough idea of the number of trypanosomes present and thus permit of the calculation of a suitable dilution.

The diluting fluid has the following composition;—Formalin (40 per cent.) 2 c.c., Glacial acetic acid 2 c.c., distilled water 96 c.c. To these are added, after mixing, 2 c.c. of Carbol fuchsin (Ziehl-Neesen).

From experiments carried out with rats the author concludes that the injection of a small number of pathogenic trypanosomes lengthens the period of incubation and, in this manner, the duration of life, as dating from the time of infection; but, when the parasites once appear in the peripheral blood, the duration of life is about the same, regardless of whether the animal was originally infected with a large or a small number.—(*Tropical Vet. Bulletin*).

W. R. C.

THE ANNUAL REPORT ON THE PUBLIC HEALTH OF THE CITY OF DUBLIN FOR 1914, BY SIR CHARLES A. CAMERON, C.B., M.D.

There is no Veterinary Department for the municipality, and consequently no separate Veterinary Report. Mr. Andrew Watson is Veterinary Surgeon under the Public Health Committee, and his work appears chiefly in connection with the Dairies, Cowsheds and Milk Shops (Ireland) Order, and Slaughterhouse and Meat Inspection. The following extracts give an idea of the scope of the work :—

"It is satisfactory to be able to report that although the number of dairy cattle examined in city cow byres was 3822 it was only found necessary in 42 cases to interdict the use and sale of milk pending bacteriological examination.

Udder Examination.

Dairy yards inspected	122	Mastitis	8
Dairy cattle in same	3822	Fibrous thickening	2
Suspects	42	Indurated quarter	48
Samples taken	41	Ulcerated teats	1
Abscess superficial	126	Tuberculous udders	2
Large	22		

Considering the number of cattle in Dublin dairy yards the proportion of tuberculous udders will be seen to be very small.

In addition to examination at railway stations, the purveyors of milk receiving country milk also assisted the inspectors very materially. Whilst the objectionable dirty cloths and old newspapers which were used as packing around churns ceased, there were other objectionable practices which require supervision to prevent, it was found necessary to summon three persons residing in the country, they sending into the city milk in cans which were defective. Fines were imposed in two cases.

Notices served during the year 1914.

	Served	Verbal
Have manure removed from dairy yard	128	8
Cleanse dirty cows	38	131
Limewash cow sheds	121	11
Increase ventilation in cow sheds	17	1
" cubic space in cow sheds	6	—
" lighting of cowsheds	13	—
Have repairs made to manure receptacle	32	—
Repair drainage of cow sheds	25	—
Have dairies and milk shops cleaned, papered, etc.	33	25
Have sleeping apartments in connection with milkshops or dairies abolished	5	—
Have objectionable articles removed from milk shops or dairies	9	—
Sundries	13	30
	440	216

Total number of inspections of dairy yards	5,458
" " dairies and milk shops	11,717

The Country Milk Supply, 1914, carried by four Railway Companies, totalled approximately 1,783,930 gallons.

The number of dairy cattle in cow byres in City average 5000. Milk supply from same about 1,820,000 gallons for the season November to May.

Slaughterhouse and Meat Inspection.

Number of visits paid by meat inspector—
Shops, slaughterhouse, abattoir, fish and fruit markets, railways, pork factories, etc., etc. 16,139

Abattoir.

The Corporation abattoir on the North Circular Road is not used by the Dublin victuallers to the extent that

anyone interested in the provision of a good and whole-meat supply would desire. This comparatively meagre use of the abattoir is mainly due to the fact that there are 58 private slaughterhouses in the city, many of which are largely used by victuallers other than the duly recognised occupier or registered owner.

The subjoined statement gives an approximate idea of the slaughtering that takes place in the abattoir and in the private slaughterhouses :—

Victuallers using abattoir	50
Beasts slaughtered weekly, about	180
Calves " " "	3
Sheep " " "	520
Pigs " " "	86
Victuallers using private slaughterhouses	123
Beasts slaughtered weekly, about	360
Calves " " "	18
Sheep " " "	950
Pigs " " "	460

The above figures do not include animals slaughtered for the army contracts, as the contractors sometimes used the abattoir in addition to private slaughterhouses.

The abattoir is visited daily by Mr. Watson, M.R.C.V.S., but it is obviously impossible for him to adequately control the meat supply of the city so long as the greater portion of it is from animals killed and dressed at all hours of the day in private slaughterhouses.

Appended figures show the number of private slaughterhouses in six other large towns as compared with Dublin :—Dublin 58, Manchester 52, Liverpool 20, Leeds 73 ; Glasgow, Edinburgh, Belfast, none.

HISTORY AND DISTRIBUTION OF HOG CHOLERA IN AMERICA.

V. A. MOORE, Ithaca, N.Y.

The following paper forms a section of the report to the American Veterinary Medical Association of the "Committee on Diseases," of which Dr. Veranus A. Moore was chairman, which was presented at the annual meeting, 1915, of the Association. In his introductory to the report, Dr. Moore says :—

"Your Committee on Diseases has, as requested by resolution at the New York meeting, centred its efforts in a study of hog cholera, its distribution and control in America. . . .

It was not until a comparatively recent date that a knowledge of the symptoms, lesions and means of diagnosing hog cholera gave much assistance to the practitioner. For this reason veterinarians, as a class, were loath to make a diagnosis of cholera, for it forecasted heavy losses from which there seemed to be no escape. At present the situation is changed. An early diagnosis is imperative for, if it is made in time and prophylactic measures taken, the majority of the herd can be saved. This places a heavy responsibility upon the practitioner who should intelligently meet his obligation both to his client and to the community. There are few, if any, specific infectious diseases of animals that can be more satisfactorily controlled by the veterinarian than hog cholera."

"The first appearance of hog cholera in this country, as ascertained by an extensive correspondence by the Bureau of Animal Industry soon after its organisation, and so far as we have since been able to learn, occurred in the state of Ohio in 1833. It appeared in South Carolina in 1837, and in Georgia in 1838. In 1840 it was found in Alabama, Florida, Illinois and Indiana ; in 1843 in North Carolina, and 1844 in New York. The

statement is made by Ostertag and also by Hutyra and Marek that hog cholera appeared first in the United States in 1833, and that it was carried to Europe from here. The *Rec. de Med. Vet.*, 1831, contains a statement in reference to the appearance of a disease in France in 1822, that, according to the description given, was hog cholera. Fleming refers to an epizooty among swine in Ireland in 1840. There are also numerous references to disease spreading among swine in Germany and other European countries prior to 1833. The accuracy of the diagnosis of these diseases cannot be assured any more than that of the disease among hogs in Ohio in 1833. All that can be determined is a conclusion drawn from the symptoms and lesions recorded. In 1865 Dr. Budd of England published a very exhaustive article on pig typhoid in which his description of the lesions is quite similar to those found later in cases of hog cholera in this country. In 1875 Prof. Axe, of London, investigated this disease and confirmed the findings of Dr. Budd.

While the fact cannot be proven the evidence is quite as conclusive that hog cholera was imported into the United States from Europe as it is that it was indigenous to America and taken from this country abroad. Whatever its source of origin, after its appearance it spread at first slowly, but later with increasing rapidity along the lines of commerce, until it has invaded practically every part of this country where swine raising has become an industry.

For a number of years after hog cholera first appeared in the United States it did not spread rapidly, although the outbreaks gradually increased in number. In the ten years from 1846 to 1855 inclusive, 93 outbreaks were reported, and it was during that period that the disease seems to have gained access to many new locations in this country. We refer to these as outbreaks of hog cholera, but the diagnosis is not clear in all cases. The literature shows that in earlier years the writings on swine diseases contain a large number of terms such as enteric fever, pig distemper, blue sickness, purples, scarlatina and many others which may or may not have been the disease now known as hog cholera.

In 1858 Dr. George Sutton of Aurora, Indiana, made a report on this disease in which he quotes The Worcester (Mass.) *Spy*, 'that many farmers in that city and vicinity are losing their swine by a mysterious and fatal disease known as hog cholera. In the south eastern part of this town it prevails in a greater or less extent upon every farm.' He adds that in most cases the disease is traced to western hogs that have been sold by drivers during the present season, and which seemed to have communicated the contagion to the other inmates of the styes in which they have been kept.

In 1861, Dr. Edwin M. Snow of Providence, R. I., contributed a paper on this disease to the United States Department of Agriculture. In 1875, Dr. James Law of Cornell University furnished to the same department a valuable paper setting forth the symptoms and morbid anatomy of intestinal fever in swine. He believed it to be contagious although the specific organism had not been found. In 1878 the United States Commissioner of Agriculture appointed nine men for a period of two months each to investigate the disease in various localities. In their reports considerable information concerning the symptoms and morbid anatomy that had been formerly described was confirmed. Law showed that it could be transmitted by inoculation, and Ditmers described a micro-organism which was called *Bacillus suis*, and which he believed to be the specific cause of the trouble. Later he described it as a micrococcus. The study of this disease was continued in the Division of Veterinary Science in the Department of Agriculture by Dr. Salmon. Its study was also taken up by certain men in other parts of the country. In 1885 Salmon and Smith announced the discovery of a specific bacterium

and described its essential characters and properties. It was called Bacterium of Swine Plague.

In 1886, Dr. Theobald Smith, of the Bureau of Animal Industry, discovered another bacterial disease of swine. It was found to be identical with the German *Schweineseuche* and due to the same cause. This led Dr. Smith to call it, on account of its identity with the German disease, swine plague and its organism the bacillus of swine plague, and to change the name of the disease described in 1885 as swine plague to hog cholera and its organism to the Bacterium of hog cholera. Dr. Billings of the Nebraska State Agricultural Experiment Station, who was working on swine diseases, was not willing to accept the change in the nomenclature and he continued to write about hog cholera, the disease first described by the Bureau, as swine plague. His writings were widely distributed both in this country and Europe, and they are in a large measure responsible for the confusion relative to the nomenclature of these two diseases.

In 1893, Dr. W. H. Welch of Johns Hopkins Medical School, and Dr. Clements of Baltimore, presented a paper before the International Veterinary Congress in Chicago, in which they gave a clear history of the nomenclature of these diseases and in which they adhered to the one of the Bureau of Animal Industry.

In 1903, deSchweinitz and Dorset discovered what they called a disease identical with hog cholera, but which they produced with virus that passed through the finest porcelain filters. Subsequent investigations by Dorset, Bolton, McBride and Niles showed that the organism known as the bacillus of hog cholera was not the cause of that disease, but when present it was a secondary invader. They did not, however, deny that it possessed pathogenic properties for swine. The correctness of this new conception of the etiology of hog cholera was soon accepted by European investigators.

Soon after the discovery of the filterable virus, it was found that the serum of hogs that had recovered from cholera possessed a certain amount of immunizing power against the disease, and that when they were hyper-immunized their serum would produce a temporary passive immunity against the virus. It was also pointed out that if the immunizing serum was used in conjunction with the virus, or the simultaneous method, the pigs became immune for a much longer time. It is this serum, known as the Dorset-Niles serum, together with the use of the virus and serum or the simultaneous method that are now being employed as prophylactics against hog cholera.

Although the fact seems to be proved that the outbreaks of cholera in this country were due to a filterable virus, it was believed that *B. suispestifer* (bacillus of hog cholera) was still a more or less important factor in swine diseases. A study of the reports of the investigations of the outbreaks shows that this organism was rarely, if ever, found in the middle West. It was, however, isolated from many outbreaks in the East and its pathogenesis for pigs was clearly established by inoculation and feeding experiments. In order that the disease produced by this bacillus should be differentiated from that of hog cholera, and in order that there might be a more differential nomenclature of swine diseases, the United States Live Stock Sanitary Association appointed, in 1910, a Committee of five to report on the nomenclature and classification of swine diseases. After carefully considering this subject the Committee reported at the meeting of the Association in 1911, that the name hog cholera should be given to the infectious communicable disease of swine occurring in epizootics caused by the filterable viruses; that the name *Salmonellosis* should be given to the disease caused by *B. suispestifer* (bacillus of hog cholera), and that swine plague should remain as the name of the infectious disease of hogs occurring sporadically or in epizootics are due to *Bacterium suispesticus* (bacillus of swine plague). The

report was adopted. While this nomenclature may not be the best, and while it has been adversely criticised, its justification rests in the fact that the diseases are distinguished by their etiology, which seems to be the one biological basis for classifying the specific infectious diseases.

There is a voluminous literature on hog cholera, and many differences of opinion exist concerning it. The findings, however, are tending to the conclusion that hog cholera caused by filterable virus constitutes the greater number of serious outbreaks among swine in this country, and that *B. suispestifer* and *Bact. suissepticus* are the causes of less serious epizootics or more sporadic diseases. The frequency of mixed infections has undoubtedly been the cause of confusion in arriving at a clear understanding of the *symptom complex* of this disease.

Distribution. Without going into details it can be stated that hog cholera exists to a greater or less extent in every hog raising state in the Union. It is much more prevalent in those sections where hog raising is an important industry, and where naturally there is more interchange of animals for breeding and other purposes. In Canada it is reported not to be common except in certain restricted areas. In those sections of the country where it is less prevalent it is found most frequently in garbage fed herds about large and small cities. The results of definite experimental work have shown that the probable source of infection in the garbage is the scraps of raw pork that come from hogs which were infected at the time of slaughter but which did not show lesions sufficiently to cause their condemnation. It is, generally speaking, a wide-spread disease, and it is gradually extending to uninfected places.—*Journal of the American Veterinary Medical Association.*

THE EFFECT OF DAYLIGHT AND DRYING ON THE HUMAN AND BOVINE TYPES OF TUBERCLE BACILLI.
By LEONARD FINDLAY, M.D., D.Sc., Physician, Royal Hospital for Sick Children, Glasgow; and W. BLAIR M. MARTIN, M.D., Lecturer in Bacteriology, Glasgow University.

A paper read in the Section of Pathology and Bacteriology at the Annual Meeting of the British Medical Association at Aberdeen, 1914. The expenses of this research were defrayed by grants from the British Medical Association and the Carnegie Trust.

Much work has already been done on the type of tubercle bacillus occurring in tuberculous lesions in the human subject. The potency of the bovine type of bacillus in producing gland, bone, and joint tubercle, particularly in young subjects, is now well recognised, as also its ability to set up a miliary tuberculosis; but there is a striking absence from published records of instances of primary pulmonary tuberculosis associated with bovine type infections.

This incidence of bovine type infections in man is noteworthy, for in general the lungs of mammals are particularly good sites for the development of tuberculous lesions, and experimentally it is much easier to induce tuberculosis in healthy, susceptible animals—for example, rabbit or guinea-pig—by inhalation than by ingestion. The bovine type of bacillus is the less virulent for man, yet when it does infect it apparently enters by the less favourable route. A rational explanation of this anomaly is still wanting.

The lesser pathogenicity of the bovine type for the human species, though it accounts for the restriction of bovine type infections to the most susceptible members of the community—namely, the young—gives no hint why primary lung infections with the bovine type of bacillus should be so rare.

Further, while opportunities for respiratory infection with the human type of organism are admittedly numerous, as large numbers of human bacilli may be contributed to atmospheric dust through the expectoration of phthisical subjects, it hardly appears reasonable to assume that a notable number of bovine bacilli are not also disseminated atmospherically by the drying of discharges and secretions containing them.

In the naturally acquired tuberculosis of domesticated animals differences are also met with. Cattle, horses, and swine are all liable to spontaneous bovine type infections, yet while respiratory infection is the chief mode in the cow, in the horse and the pig it is most frequently alimentary (Nocard). Whether this lung incidence in domesticated animals is due to real differences in susceptibility of the lungs of these species, or merely to different modes of infection consequent upon the habits of each species, could only be settled by comparative inhalation experiments upon them.

To account for the absence of aerial infection of man by the bovine type of bacillus it has occurred to us to inquire whether atmospheric influences are more deleterious to the bovine than to the human type of bacillus. The effects of desiccation and daylight on tubercle bacilli have been studied by several observers, and depending largely upon the experimental conditions, markedly different results have been obtained; but, so far as we know, no comparative tests have been made between typical human and bovine types of bacilli. There is general agreement that drying, even for months, has of itself little influence; however, when dried in dust Kirstein, for example, found that human tubercle bacilli did not survive diffuse daylight longer than fourteen days. Koch's cultures, exposed at a window to diffuse sunlight, died in five to seven days, while in direct sunlight they were killed in from a few minutes to several hours—a period which Weinzirl finds shortened to from two to ten minutes when the organisms are spread in thin films and are unshaded by glass.

In our experiments we used pure cultures on egg media of bacilli of known pedigree and virulence. Both were originally derived from the human subject, had been under cultivation for two years, and still retained their distinctive characters. They were exposed simultaneously and under identical conditions in each series of experiments in a room (temperature 50°–60° F.) with a northern exposure, and their virulence for the rabbit was then estimated by intravenous inoculation of amounts equivalent to 0.01 milligram of moist culture. (Detailed results are given in tabular form). Only the desiccating action of room temperature and the actinic effect of diffuse daylight were thus observed, either singly or together. As days vary much in brightness, in order to give some measure of them, we have included in our tables numbers indicating the hours of sunshine recorded during each of the periods of exposure. These figures were obtained, through the kindness of Professor Becker, from the records of the University Observatory, which is situated within half-a-mile of the laboratory.

From Table I. (*Effect of Desiccation alone*), it is seen that there is little appreciable loss of virulence of either type after seven days' desiccation.

From the experiments recorded in Table II. (*Effect of Diffuse Daylight alone*), it is seen that diffuse daylight causes a definite lowering of the virulence of both types; within seven days the human being avirulent. Note the small amount of sunshine recorded (3.4 hours) during the first five days.

In Table III. (*Effect of Diffuse Daylight with Simultaneous Desiccation*), a marked diminution of virulence is seen to have occurred within three days (11.1 hours recorded sunshine) and after seven days (only 3.2 hours more of recorded sunshine) pathogenicity had gone. The main point that emerges from this series is that under the combined influence of desiccation and diffuse

daylight not only is there a fall in virulence, but also that the drop is much more pronounced in the case of the bovine type.

The general conclusion, then, is that, tested in this way, the bovine type is distinctly more susceptible to the prejudicial effect of ordinary atmospheric influences (daylight and drying) than is the human type of tubercle bacillus. This difference between the types may in part explain why aerial infection with the bovine type is so infrequent in human beings.—*Brit. Med. Journal.*

Horse Breeding in Texas.

Texas heads the United States in the production of mules, and has second place in the breeding of horses, that being a very profitable industry, especially so far as draught and farm horses are concerned. These are hard workers, can pull heavy loads, and possess great endurance. Their number was estimated last year at 1,216,000, and their value is not equal, generally speaking, to that of mules bred in the same State. It is also reported from the New Orleans district that the laws passed by several of the States in the Union prohibiting betting at race meetings have lessened the demand for thoroughbred horses in the United States to such an extent that many of the owners of stud farms have left the country and taken their horses with them. Some time ago a prominent Kentucky breeder shipped his thoroughbreds—in all 159 horses, valued at £50,000—to Australia for the purpose of starting a large stud farm in that country.

The essentials of the Clydesdale.

The following is from a lecture by Prof. John R. McCall:—

"Although it is commonly believed that Lanarkshire was the home of the Clydesdale, there is evidence to prove that at the time referred to quite a number of good animals were to be found in Renfrewshire and other counties.

With the foundation of the Stud Book in 1877 the improvement in the Clydesdale became more manifest. Those responsible for the book had considerable difficulty in deciding what animals were to be admitted. They allowed in two horses, Prince of Wales and Darnley, which were the real foundation of the present breed. Both Darnley and Prince of Wales were of Shire descent.

The chief essentials of the Clydesdale are the possession of extraordinary quality, with weight, substance, gaiety of action, quality of bone, and nice silky hair, sloping pasterns, and large, sound feet. The height of males is usually about 17 hands, and of females up to 16 h. 2 in. To-day the Clydesdales are divided into two types, one of which is the show type, such as may be seen at Scotstown and other shows. Animals of that type show superb quality, extraordinary finish, and good action, but, if one might be hypercritical, a little lacking in middle and substance. They had not to consider the height of an animal only. A Clydesdale might be 17 hands high, but, looking at him 'end on' there might not be very much of him. Owing to the great extent to which in-breeding was carried on, quality was being produced at the expense of substance. Breeders had to face that question, the results of which were apparent in the show ring. Clydesdale breeders had always to keep the market in view—there is always a demand for good heavy horses—they had that market at home and abroad. The Colonies wanted horses of size and weight, and if farmers would choose to breed with that object in view there would be fewer 'misfits' and disappointments.

It had often been suggested of late that the only remedy for the so-called deficiency in size is to adopt the principle of allowing in Shire blood again. That

however, is out of the question. The Clydesdale Stud Book is recognised all over the world, and it would never do to open up the book and admit Shire blood again. Those who wanted increased size should use the Shire, but let it be done without the Stud Book."

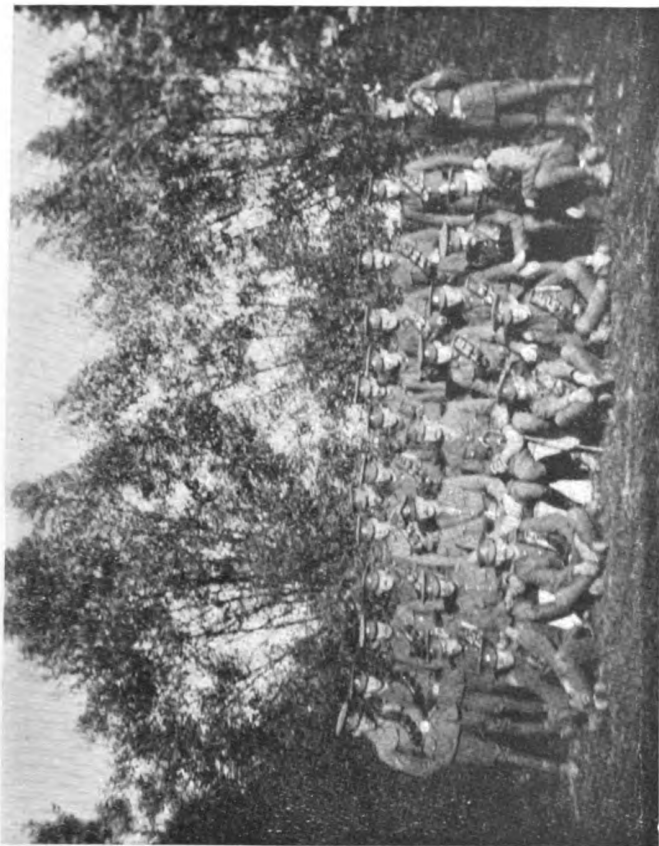
A Sixteenth Century Stable.

The following description of a Royal Continental stable of the time is by Fynes Moryson (16th century).

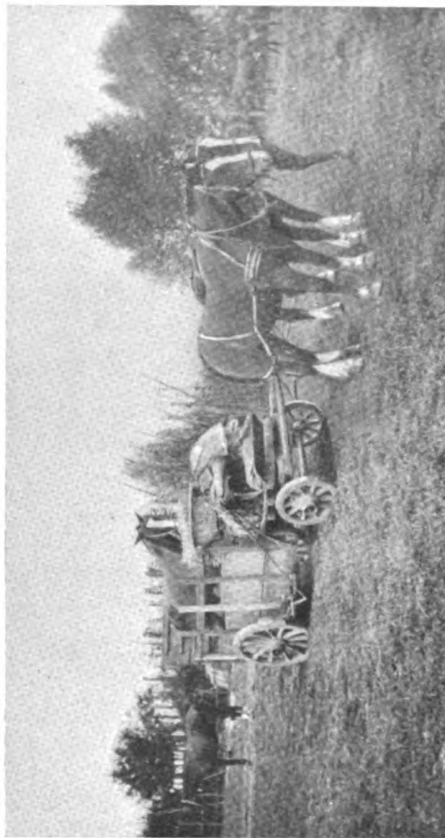
"The Elector's stable is by much the fairest that ever I saw, which I will briefly describe. In the first court there is a horse-bath, into which they may bring as much or little water as they list, and it hath twenty-two pillars, in each whereof divers arms of the Duke are graven, according to the divers families whose armes he gives. The same court serves for a tilting-yard, and all exercises of horsemanship; and there is also the horse-leache's shop, so well furnished as if it belonged to a rich apothecary. The building of the stable is four square, but the side towards the Duke's pallace is all taken up with two gates and a little court yard, which takes up half this side, and round about the same are little cubboords peculiar to the horsemen, in which they dispose all the furniture fit for riding. The other three sides of the quadrangle contained some 136 choise and rare horses, having onely two other gates leading into the Cities market-place, opposite to those gates towards the Court. These horses are all of foreign countries, for there is another stable for Dutch horses, and among these chiefe horses one named Michael Schaz (that is Michael the treasure) was said to be of wonderful swiftnesse. Before each horse's nose was a glasse window, with a curtaine of green cloth to be drawn at pleasure; each horse was covered with a red mantle, the racke was of iron, the manger of copper; at the buttocke of each horse was a pillar of wood, which had a brazen shield, where by the turning of a pipe he was watered; and in this pillar was a cubboord to lay up the horse's combe and like necessities, and above the backe of each horse hung his bridle and saddle, so as the horses might as it were in a moment be furnished."—*Horse and Hound.*

Powdered Permanganate in the Treatment of Wounds.

M. Belin has for more than ten months employed permanganate of potash in powder form in the treatment of all wounds coming before him in the veterinary service of an infantry brigade. He has accumulated a vast experience, starting with laboratory research before the war, and is struck with the surprising rapidity with which wounds treated in this way cicatrise. In 15 days even severe wounds may cicatrise without extraction of the bullet. M. Belin has studied the mechanism of action: a true living culture of organic cells results, the permanganate rapidly ceasing to be a powerful antiseptic and becoming a cicatrising agent which constantly gives up oxygen to the subjacent plasma and so to the cells bathed by it, oxidising the toxins and protecting the damaged area by means of the continuous adherent crust which the application has produced. The same technique applied to human wounds has given precisely similar results: the pain produced is bearable, not exceeding that caused by the application of iodine. In view of the simplicity of the method, the atoxicity of the product, its value as an antiseptic, the duration of its action, the adherence to the wound which is protected even if the dressing slips, its favourable action of cicatrization, and its bactericidal and inhibitory action especially on anaerobes (tetanus, gas-gangrene), M. Belin considers that it would be rational to add a packet of permanganate to the first-aid outfit, as this will result in saving life and avoiding complications.—*The Lancet.*



OFFICERS, N.C.O. AND MEN OF A.V.C. WEST RIDING DIVISION.



A.V.C. WEST RIDING DIV. AMBULANCE WITH PATIENT, AT THE FRONT



PYELO-NEPHRITIS. Left Kidney of cow, $12\frac{1}{2}$ lb.
To illustrate note by W. E. Blackwell, M.R.C.V.S.

"Mysterious" Disease in Ireland.

An instance of the devastation wrought on the lands of Carrowmore, Tulrahan, by a mysterious disease among cattle was afforded at the Claremorris Quarter Sessions recently in an action brought by the Congested Districts Board against a tenant of theirs for the recovery of one year's rent. The defendant admitted the amount due, but pleaded inability to pay, through the loss of his entire stock, nine head of cattle in all, by a strange disease which ravaged that side of the country.

Mr. O'Brien, v.s., Claremorris, gave evidence that the defendant was one of the heaviest losers in the district, and the nature of the disease had never been ascertained. The Department of Agriculture had applied themselves to a solution, and an eminent bacteriologist had come down and taken away with him materials for the purpose of his investigation, which, however, was not completed, as he had since joined the colours.

His Honor stated that he had read in the papers an account of the ravages of the disease in the district, but he should give a decree, and expressed the opinion that the case was deserving of the utmost consideration by the Board.—*Farmers' Gazette.*

A new species of Louse on Goats.

In a study which Ledyard made of the Thread Lung Worm in goats it was found that the animals were seriously affected by lice. Specimens of this louse were sent to Professor Vernon L. Kellogg of Leland Stanford Junior University. He described it as a new species, which he has called *Trichodectes hermsi* (Kellogg), in honour of Professor W. B. Herms of this station. Like all other vermin of this sort, it was easily controlled by dipping with coal tar disinfectants, such as Kresol or some compound solution of cresol. The reduction in profits to stockmen on account of lice harbored by domestic animals is far greater than is usually recognised and is a loss that is comparatively easy to prevent.—*Report of the College of Agriculture and the Agricultural Experiment Station of the University of California.*

PARLIAMENTARY.

In the House of Commons, on Nov. 25.

FOOT-AND-MOUTH DISEASE.

Mr. ACLAND, in reply to Capt. C. Bathurst, said the total number of outbreaks of foot-and-mouth disease since the outbreak near Bala a month ago was now 46, of which 45 had occurred in the Bath and Glastonbury districts and one in Pembroke. The animals already slaughtered comprised 862 cattle, 225 sheep, 324 swine, and one goat, and of these 432 cattle, three sheep, and 107 swine had so far been found to be affected. The area now subject to restrictions was one of approximately 15 miles round Bath and an adjoining area having a radius of about 10 miles from Butleigh, Glastonbury.

Motor Spirit.

Extract from Finance (No. 3) Bill (as amended in Committee).

13. For the purpose of giving veterinary surgeons an allowance or repayment of half the amount of motor spirit duty, whether payable under section eighty-four of the Finance (1909-10) Act, 1910, or this Act, Part I. of the Fifth Schedule to the Finance (1909-10) Act, 1910, shall be read as if the following paragraph were added thereto, namely:—

"(5) To a motor car kept by a registered veterinary surgeon whilst it is being used by him for the purposes of his profession."

The Hunting Memorial Fund.

Subscriptions received up to November 24th, 1915:—

Amount previously acknowledged	£377	18	0
Chas. F. Parsons, Esq., M.R.C.V.S., Cheltenham	1	1	0
Lieut. H. Keeling Roberts, A.V.C., Reserve Horse Transport Depot, Blackheath			
second donation	10	6	
Geo. H. Jelbart, Esq., M.R.C.V.S., Stow-on-Wold	10	6	
Fred. Leeds Gooch, Esq., F.R.C.V.S., Stamford	1	1	0
Lieut. W. W. Lang, A.V.C., Indian Exped.			
Force A., France	1	1	0
Geo. A. Harrison, Esq., M.R.C.V.S., Herne	10	6	
	£382	10	6

Remittances by cheque or postal order to be made payable to "The Hunting Memorial Fund," and crossed "London, City and Midland Bank, Ltd., Kensington Branch."

HENRY GRAY, Hon. Sec. and Treas.

23 Upper Phillimore Place, London, W.

The Hunting Memorial Stone.

The Memorial Stone has now been erected over the grave of the late Mr. William Hunting, F.R.C.V.S., in Putney Vale Cemetery.

It is to be hoped that all the friends and admirers of the deceased gentleman will, when they can find time or are in the neighbourhood of the cemetery, take the opportunity of inspecting the memorial.

A brass tablet is going to be placed under the portrait of W. Hunting in the Council Chamber of the Royal College of Veterinary Surgeons, 10 Red Lion Square, London, W.C.

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donation is reported:—

Mr. William Watt Dollar, London	£5	0	0
Previously reported	52	7	0
Total	£57	7	0

FOREMAN.—On Dec. 1st, at High Cross, Tottenham, to Mr. and Mrs. R. J. Foreman, a daughter.

OBITUARY

JAMES JOHNSTON FRASER, M.R.C.V.S., Leicester.

Graduated, N. Edin.: April, 1880.

Mr. Fraser died on Nov. 30th, aged 62.

ECONOMY—A QUESTION IN.

Sir,—At the present time we hear a great deal about economy, and conserving all the necessities that we produce from the soil. We are told to make use of every available piece of land, by intensive culture and otherwise.

But so far I have seen no advice nor any mention of an endeavour being made to save the enormous number of domestic animals that are "done to death" every year, through ignorance, amateur doctoring, quacks, and the indiscriminate use of proprietary medicines and "cure-alls," which are advertised in the agricultural press.

The farm animals have another very serious enemy in the "arm chair vet."—the "lightning diagnoser"—of the papers, by whom the most serious diseases are prescribed for with an arrogance, and presumption, which might well bring the blush to the face of any "Hun."

If a human being is maltreated, or poisoned by some nostrum, an inquest is held. Why not have some similar inquiry regarding the death of a valuable animal that has not been professionally attended?

That some move should be made will be evident to any country practitioner. There are at present many drastic

measures being put in force. The time is ripe when we, as a profession, should combine and put the facts before the Board of Agriculture in the form of a petition, signed by every member of the profession on the Register. We might individually approach our Members of Parliament, and also arouse public interest by ventilating the subject in the press.

As an instance of the efficiency of the profession, we have only to look at the unstinted praise dealt out on the splendid condition of our cavalry and transport animals under the care of the vet. only.

I trust some more able pen than mine will take this matter up in the interests of one of the most important branches of our national food supply.

Vox.

THE POSITION OF OFFICERS A.V.C. (T.F.)

Sir,—With reference to Mr. Newdegate's letter to the *Times* on the 9th ult., from the House of Commons, calling attention to the grossly unfair treatment of officers, A.V.C. (Territorial), and also the reference to the difference in treatment meted out to these officers as compared to all officers in the R.A.M.C.—does it not seem extraordinary that our Council do not move in the matter?

The concessions granted to the R.A.M.C. were due in very large measure to the pressure exerted by their Council, and it is not very edifying to the profession that Territorial veterinary officers who joined in August, 1914, and later, should be still lieutenants, whereas all R.A.M.C. officers receive promotion after six months service!—Yours, etc.,
Nov. 18. DISAPPOINTED.

[The foregoing has been unavoidably held over. We have at different times received letters of similar purport from several sources, but hitherto have refrained from publishing them. This one, in common with some others, assumes that "our Council do not move in the matter." The letter to the D.G.A.V.S., reported at last meeting of Council (see our issue of Oct. 16, p. 172), is surely sufficient to show that such is not the case, and none of these letters offer any evidence that those efforts have ceased. The reference to the action of the medical profession in respect of the R.A.M.C. seems to make it necessary again to point out that they are numerically as 10 to 1 of our profession, that they have representatives and numerous supporters in Parliament, that they have an Association which is strong both numerically and financially, and there is also the weight which attaches to the alleviation of the sufferings of relatives and friends who are on war service. It should be obvious that our Council, acting for a profession which has been persistently neglected by the State for the seventy years of its corporate existence cannot take up a position equivalent to that of one so much older and stronger. But that is no evidence that they are doing nothing.]

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Nov. 25.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieut. to be temp. Capt.:—F. S. Clay, dated Nov. 9.

Col. E. R. C. Butler, C.M.G., to be temp. Brig.-General whilst employed as a Director of Veterinary Services, dated Nov. 7.

Nov. 26.

Temp. Lieuts. to be temp. Captains:—G. Barry, T. M. Parker, dated Nov. 11.

Dec. 1.

Temp. Lieuts. to be temp. Capts.:—W. P. Power, dated Nov. 16. A. Hoskins (Nov. 17.)

To be temp. Lieut.:—C. J. Clifford, dated Nov. 17.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Dec. 1.

The appt. of Lieut. J. W. Tait, which was announced in *Gazette* of April 18 is cancelled.

To be Lieut.:—J. W. Tait, dated Dec. 2.

Dec. 2.

To be Lieut.:—W. H. Macfarlane, dated Dec. 3.

The A.V.C. Comforts Fund.

Strathyre, Parsifal Road,
Hampstead, N.W.

Dear Sir,—I herewith enclose further list of contributions of money and gifts received since previous list published in your issue of Nov. 13. May I again appeal for all knitted and flannel garments to be sent in to me as early as possible, as I am very anxious to despatch all consignments to our men on active service as soon as possible. May I also suggest that should any senders of parcels desire these to be numbered in the published lists, I cannot undertake to do this unless they will put the correct number of parcel on the list enclosed with it.

Yours truly,

Nov. 24. ADELAIDE M. MOORE.

(This list was unavoidably held over last week.)

List of Contributions received:—

Lieut.-Col. R. H. Holmes	£1	0	0
Mrs. T. Bone	1	0	0
Lieut.-Col. Arthur England	1	1	0
Miss Bevis	2	0	0
Mrs. Longbottom (per Mrs. S. Walker)	1	0	0
From Students, Royal (Dick) Veterinary College, Edinburgh, result of Billiard Match	2	7	6
Mr. Peter Wilson	1	0	0
Mrs. William Dale	2	2	0
Mrs. E. M. Richardson	1	1	0
per Mrs. Shipley:—			
Mrs. Buxton	1	0	0
Mr. J. A. Rolfe	10	6	
Mrs. Wyllys, Sen.	10	0	
Mr. Robert Crow	5	0	
Mrs. Frank Arnold	10	0	
Mr. S. Rolfe	10	0	
Mr. R. C. Tayler	10	6	
Mr. Thomas Cook	1	0	0
Mr. F. W. Barclay	10	0	
Mrs. Worts	10	0	
Mrs. H. Low	1	0	0
Miss Aldred	10	0	
Miss Hunter	2	6	
		7	8 6
		£20	0 0

CORRECTION.

The following is the correct reading of the first item on the list in our issue of Nov. 13th:—

per Major Alston Edgar, A.V.C., subscribed by No. 5 Reserve Section, Army Vety. Corps, Curragh £5 0 0

Parcels received from:—

Mrs. Shipley, containing gifts from Mrs. Bray, a friend, a friend, Mrs. M. L. Cleveland, Mrs. Rattee.

Second parcel, containing gifts from Wells Branch Bristol Red Cross (Mrs. G. Smith), Mrs. H. Wyllys, Mrs. Wilkinson, Mrs. Rattee (Fundenhall). Mrs. Press, Miss Blagg, The Mayoress of Gt. Yarmouth (Mrs. Worledge).

(20 prs. socks, 4 mufflers, 6 pr. mittens, 1 fl. shirt).

Mrs. Todd : Sun-shields and mittens
 Mrs. Nurse (Working Party, Windermere) : Helmets, mufflers, socks, mittens
 Mrs. Garnett (St. Mary's, School Windermere) : Mufflers, socks
 Mrs. Walker (Alton) : Socks, mittens, helmets, muffler
 Mrs. Rutherford : Socks
 Mrs. Kirby : Mittens, mufflers, helmets
 per Dr. Bradley :—
 Edinburgh friends : Mittens, mufflers, socks
 Mrs. Latta : Books, socks. Mrs. Fennell : Socks
 Mrs. Hamilton : Socks, mittens, belts, mufflers
 per Mrs. Quinlan (Working Party, Streatham) : Mufflers, helmets, mittens (wool supplied), writing cases
 Miss Edwards (Neath) : Mufflers, mittens, cigarette holders
 Mrs. Haywood : Mufflers
 Mrs. Sargent and Mrs. Heyland : Socks
 Mrs. Crafer : Mufflers, socks. Mrs. Walsh : Mufflers
 Lady Maud Cavendish : 60 prs. Socks, 10 mufflers (from Derbyshire Soldiers' Comforts Committee).
 Mrs. Barber (Rugby) : Pyjamas, helmets, muffler
 Mrs. Hepburn : Socks, mittens, bodybelt, sweater, helmet
 Mrs. O'Rourke : Mufflers, mittens, gloves
 Mrs. McGowan : Muffler, socks. Miss Henderson : Socks
 Mrs. Fearnside : Cigarettes, six parcels of comforts, socks, etc.

Dear Sir,—I would be grateful if you will be so kind as to publish in this week's issue of your paper the accompanying list of donations. May I take this opportunity of thanking those friends who have so generously assisted my collection for Mrs. Moore's Fund.

Yours truly,
 Nov. 22nd. MARGT. METTAM.

Collected by Mrs. Mettam, R.V.C.I., Dublin,
 for Mrs. Moore's Fund.

Major Peddie, A.V.C. (T.)		£1	0	0
Mr. P. J. Howard, Ennis	2nd don.	1	1	0
Mr. T. Salusbury Price, London	"	5	0	0
Messrs. J. & H. Sumner, L'pool	"	2	2	0
Mr. H. Begg, Hamilton	"	1	0	0
Mr. M. Darby, Balbriggan	"	1	0	0
Mr. L. Magee, Navan	"	1	1	0
Mr. T. J. Mulcahy, Clonmel	"	1	1	0
Mr. F. A. Heney, Dublin	"	1	1	0
Mr. A. Watson, Dublin	"	10	0	
Mr. J. H. H. Peard, Dublin	"	1	1	0
Mr. J. Holland, Athy	"	5	0	
Mr. T. D. Lambert, Dublin	"	1	1	0
Mr. M. Barlow, Bray	"	2	0	0
Mr. J. Healy, Cork	"	10	6	
Mr. W. H. Bloye, Plymouth	"	1	1	0
per J. V. Daly, Dublin :—				
Mr. J. Daly	2nd don.	£1	0	0
Mr. John Daly	"	1	0	0
Mr. J. Daly, Jun.	"	1	0	0
Mr. J. V. Daly	"	1	0	0
Mr. J. Nugent	"	1	0	0
Mr. M. Nugent	"	1	0	0
Mr. B. Nugent	"	1	0	0
Mr. John Kenny	"	1	0	0
		8	0	0

Previously acknowledged

£28 14 6
 325 19 6
 £354 14 0

The Green-bearded Oysters.

There is an unfounded prejudice against the green-bearded oyster which ought to be removed. The common notion is that the greening of the gills of the oyster is either a sign of disease or that copper has specially invaded the mollusc. Neither is correct. It is deplorable that there should be at our disposal a bountiful supply of these nutrient delicacies, greenbeard oysters, in the salt estuaries of the Essex coast and that they should not meet with public favour because they have assimilated a green colouring material in their gills. This colouring is neither a sign of unhealthy condition nor of copper accumulation. It means that with the approach of winter there occurs in these salt marsh creeks a growth of a green sea moss, a purely vegetable product which is appreciated as food by the oysters lying in the adjacent beds. The greenness of the turtle might be objected to on the same lines and similar unreasonableness. In France the greening of oysters is a matter of study, a kind of finishing process, and the most esteemed oyster in that country is the green-beard, the "huitres verts." It is simply a question of environment. It is just possible that the "green-beard" is a living proof of a pure environment, for the algæ do not thrive in polluted waters or in waters which are newly charged with organic matters, as is often the case in estuaries carrying to sea the sewage of large towns.

In the well-known gastronomic work entitled "A Book of the Table," by Kettner, it is stated that more than a hundred years ago Thomas Fuller, the great divine, said that "the best oysters in England were the fat, salt, green-finned sort bred near Colchester." It is then stated that "since then, although the green-finned oysters are prized above all others on the Continent, they have come to be slighted in England through the fear that the greenness may be the effect of copper." The question attracted the attention also of that distinguished naturalist, Mr. Frank Buckland, who wrote that the reason why oyster-eaters in England have not hitherto availed themselves of these home-bred oysters is that their beards (the breathing gills) are in the winter months more or less tinged with a green pigment. This peculiar green, he said, is imparted to them by the seaweed called crowsilk, which grows abundantly in the Essex salt creeks. "Dr. Letheby's analysis," he added, "has pronounced this pigment to be purely vegetable, without the slightest trace of copper or other mineral. I consider that the vegetable pigment imparts a peculiar taste and agreeable flavour to the meat of these plump little oysters." This description which is borne out by a recent investigation which we have made, including a visit to the oyster beds at West Mersea, near Colchester, and a chemical and microscopical examination of the "green-beards" taken from these beds.

The grounds where these oysters are cultivated are situated between walled marsh-land or salt marshes away from all risk of sewage contamination. There is no sewage system at Mersea; there is no main sewage pipe discharging into the estuary. The society known as the Mersea Island Cooperative Society, Limited, organised by and composed of the fishermen themselves, possess pits in which the oysters are deposited for a few days in order to have stocks handy for sending off at short notice. These are situated on the end of an uninhabited peninsula known as Feldie Marsh, separated by two "fleets" from the foreshore opposite the village of West Mersea. This precaution was taken by the society, in spite of the fact that the pits on the foreshore of Mersea Island have recently been declared free from contamination by the Board of Agriculture and Fisheries bacteriologist. It was felt, however, that contamination was not outside the range of possibility here, and it was

decided to secure this special situation for the beds in order to claim that the oysters are stored in a perfectly clean and healthy environment free from any suspicion of contamination.

It is a well-known fact that most shell-fish contain copper. We have found it invariably present in the oyster. We have not examined a single oyster without finding copper in it, but in minute quantity. Copper is present to a greater extent in the winkles, and we find that traces of it occur in the turtle. But we found much less copper present in the green-beard oyster than in the untinted varieties. While copper is a ubiquitous constituent of shell-fish, its distribution is chiefly in the liver and not in the gills or beard. We separated the gills of a green-beard and estimated the copper in the gills and in the fleshy portion, which is mainly liver. In the gills of four green-beards there was 0.0001 gramme of copper present, while in the "meat" there was 0.0004 gramme of copper present, and yet the meat is not green. In some white-beards examined the total copper found in four oysters was 0.0035 gramme of copper, or seven times as much as the total copper found in the green-beard oyster, and 35 times as much as was found in the separated green gills. This general occurrence of copper in the oysters and all shell-fish is not alarming; but the curious point is that there is far less copper in the green-beard than in the ordinary or white-bearded oyster, and yet the prejudice against the green-beard has been based in certain quarters on its copper content. The oyster contains a remarkable amount of iron and probably in a valuable therapeutic form—namely, as an organic combination. The total amount of iron found in four oysters was 0.0054 gramme (Fe). Of this a

notable proportion occurred in the gills, which is consistent with the view that the green pigment is due to vegetable matter (e.g., sea algae or sporules of the seaweed called crowsilk), containing, of course, chlorophyll with its complement of iron.

It was unfortunate that this oyster was ever called the green-beard. Such a name as the "crow-silk" oyster would perhaps have forestalled prejudice altogether. Such a prejudice does not only an injustice to an important and deserving industry but leaves neglected a source of wholesome food-supply at a time when every available food-stuff should be employed.

The war has very seriously handicapped our fisher-folk chiefly by restricting their operations within narrow limits round our coasts, so that most of the usual harvest of the sea is lost. Many of them are turning their attention perforce, therefore, to in-shore fishing. Our trade with the Continent has necessarily declined in such matters as oysters, and oysters were exported in large quantity before the war. In the narrow channels or "fleets" running up between the extensive areas of practically uninhabited walled marshes which lie between the south-west portion of Mersea Island and the estuary of the Blackwater, there exists an extensive system of oyster cultivation, conducted on the small holding system by working dredgermen. Each man cultivates one or more layings, usually about 100 yards long, and the width of the "fleet" varies from, say, 30 to 100 yards. The men have now formed a co-operative society with the view of establishing a home retail trade so that the public can obtain oysters and other fish direct from the fishermen. This enterprise claims support.—*The Lancet*.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)			(a)	
Gr. BRITAIN.											
Week ended November 27	14	14	9	20			26	50	11	64	302
Corresponding week in	1914 ...	14	14		1	4	†	†	8	88	484
	1913 ...	18	19		3	6	30	39	16	62	462
	1912 ...	20	31		1	1	41	94	17	56	638
Total for 48 weeks, 1915	528	595	49	341	47	82	||770	||1656	188	3714	15888
Corresponding period in	1914 ...	664	725	24	124	91	†1530	†2642	188	4056	37768
	1913 ...	528	581	1	23	139	2210	4342	179	2334	29521
	1912 ...	701	794	82	639	165	2635	5554	255	2728	37312

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, Nov. 30, 1915

† Counties affected, animals attacked: —

|| Figures for thirty-five weeks only.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)			(a)	
IRELAND. Week ended Nov. 27	...	...	...	...	...	...	Outbreaks 3		7	9	18
Corresponding Week in	1914 ...	...	...	...	...	...	1		4	3	2
	1913 ...	...	...	...	...	...	...		13	1	...
	1912 ...	...	...	...	...	...	1		13	2	17
Total for 48 weeks, 1915	2	2	...	...	1	3	68		378	236	1310
Corresponding period in	1914 ...	1	1	76	957	...	74		454	185	919
	1913 ...	...	...	...	...	1	112		474	130	855
	1912 ...	3	3	68	382	...	60		337	204	1652

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Nov. 29, 1915

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1431.

DECEMBER 11, 1915.

VOL. XXVIII.

"LEAFLET 292."

We reprint, by request, the leaflet on Symptoms and Notification of Foot-and-Mouth. It is issued primarily "with a view to supplying farmers and stockowners with the information," and with that end in view, "it is thought that it might usefully be brought to the notice of practising veterinary surgeons." The endeavour to spread this necessary information is doubtless an outcome of recent happenings in the West of England, and the leaflet is well suited for its purpose: the details are succinctly given, and are sufficient. Copies can be obtained free of charge—see page 268.

POSITION OF OFFICERS A.V.C. (T.F.)

Reference was made in our issue of last week to this subject. This week we would direct attention to the resolution under the heading of T.F., passed at the recent meeting of the Royal Counties V.M.S. It carries an added significance in the fact that a member of Council, R.C.V.S.—therefore in a position to know—was in the chair. There is also a short note of further questions on the subject in the House of Commons.

A PROFESSIONAL ADVANCE.

Some of our readers will have noticed last week that the paper on Hog Cholera, by V. A. Moore, was quoted from the "Journal of the American Veterinary Medical Association," but only those acquainted with American veterinary literature will have recognised this as a new title. The following extract from an introductory by the editor in the number for November—No. 2 of the new series—tells the why and the how of the new departure.

"It is doubtful if Dr. Liantard, as an active participant in the formation of the U. S. Veterinary Medical Association, fully appreciated the chance of its later development into the American Veterinary Medical Association and the possibilities opened up for welding the veterinary profession of this and adjacent countries into a more capable and homogenous mass.

Five or six decades ago the veterinary material of this country was decidedly raw from an educational standpoint as compared with European standards. The diagnosis was easy to Dr. Liantard and as a remedy he organised one, if not the first of the veterinary schools which has survived. Education, then as now, is fundamental to real progress.

Later he established the *American Veterinary Review*, which at the outset was the official organ of the U. S. Veterinary Medical Association. In 1890 an extra number of the *Review* was printed, devoted exclusively to the proceedings and papers presented at the first meeting of the Association held in Chicago—the twenty-seventh meeting of the Association. From the records this appears to be the first separately printed volume of the proceedings: in subsequent years the Association printed its own proceedings and the official connection with the *Review* became less

apparent. It, therefore, seems fitting that the Association, in considering the abandonment of its separate volume of proceedings, which because of its considerable size was beginning to cost about as much as the annual dues amounted to, and to substitute a Journal for it, should take over this publication for its use."

There is nowhere a combination of veterinary surgeons which wields such power as the American V.M.A.—a power built up in a very few years, a position only possible in a comparatively new community. They have brought the teaching colleges into line in the matter of qualification—only graduates of approved colleges are acknowledged members of the profession. The area covered by their organisation is enormous, and the number of "local societies"—a much wider definition than is expressed by the term in these islands—is continually increasing, and though they are not affiliated, they are to some extent "feeders" to the larger organisation. It is not surprising that the Association feels itself strong enough to maintain a Journal, and as the first under the control of a body of the profession we heartily welcome it.

The November number is in several respects the first under the new conditions, since that for October though actually issued by the Association was in a transition stage. There is a very distinct improvement both in matter and appearance—the former partly on account of the inclusion of several papers presented at the Annual Meeting. We shall refer to this again next week.

FACIAL PARALYSIS IN THE HORSE.

By HENRY TAYLOR, F.R.C.V.S., Haywards Heath.

The subject was an army horse of the heavy van type, and the paralysis was confined to the right side of the face. The cause was no doubt an injury in the region of the zygomatic arch, for the hair was knocked off that region. There was nothing remarkable about the symptoms, they were just the ordinary ones. The lips and nostrils were drawn to the sound side; the opening of the nostrils was distorted, and prehension of food was difficult. The eyelids and ears were not affected, but the lower lip was pendulous.

Treatment consisted of the infriktion of ointments of iodine and mercury; but most of my other similar cases improved in the course of say six or eight weeks, whereas this one showed hardly any change for quite two months. Recovery now seemed rather doubtful, but in the course of the next month a slow improvement set in which was steadily maintained, and in about another month the animal regained full power in the muscles and the expression became normal.

A COMMON TREMATODE WORM FOUND IN HORSES IN WEST AFRICA.

The commonest trematode worm found in horses in Ashanti and in the Northern Territories is a fluke called *Gastrodiscus aegyptiacus* (Sonsino).

I estimate that 75% of the horses in these districts harbour these helminths. They are easily killed or expelled by the use of male fern, linseed oil and aloes. Their predilection seat is the cæcum and double colon, in which situations they are to be found adhering to the mucous membrane. In the many post-mortems made, these trematodes have never been found in the positions quoted in Neumann's "Parasitology," i.e., in the stomach and œsophagus.

The order *Trematoda* is divided up into three or four families:—

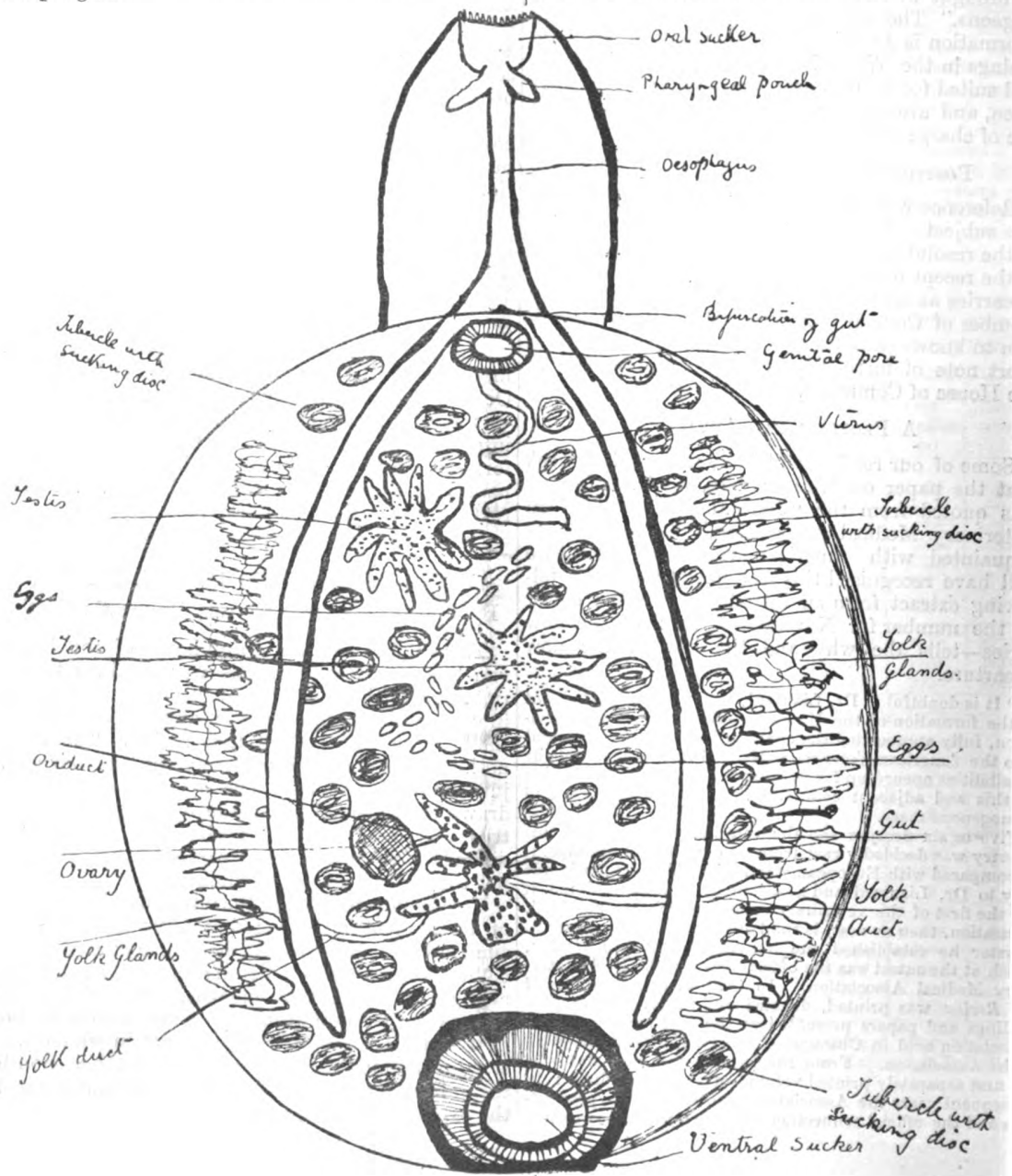
(a) *Monostomidæ*.—Characters: one oral sucker, and they are unisexual.

(b) *Fasciolidæ*.—Characters: two suckers, oral and ventral, and are unisexual.

(c) *Schistosomidæ*.—Characters: two suckers, oral and ventral, and are bisexual helminths.

(d) Some authors make a fourth family, namely, *Paramphistomidæ*; others make this family a sub-family of *Fasciolidæ*.

The *Paramphistomidæ* are distinguished from the *Fasciolidæ* by the following characters; they have a ventral sucker terminal displacing the excretory pore, the excretory pore opens dorsally near the posterior end of the body, the pharynx is fused



BOARD OF AGRICULTURE LEAFLET NO. 292.

UNIV. OF
CALIFORNIA

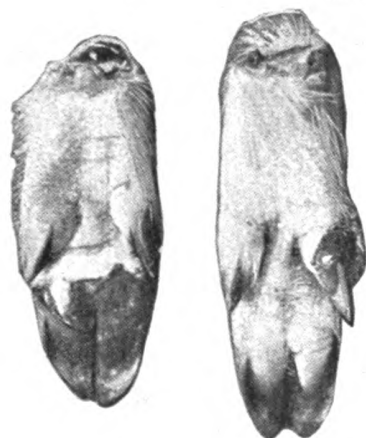


FIG. 1.—Feet of a pig affected with foot-and-mouth disease. The vesicles have ruptured and the horn is separating.

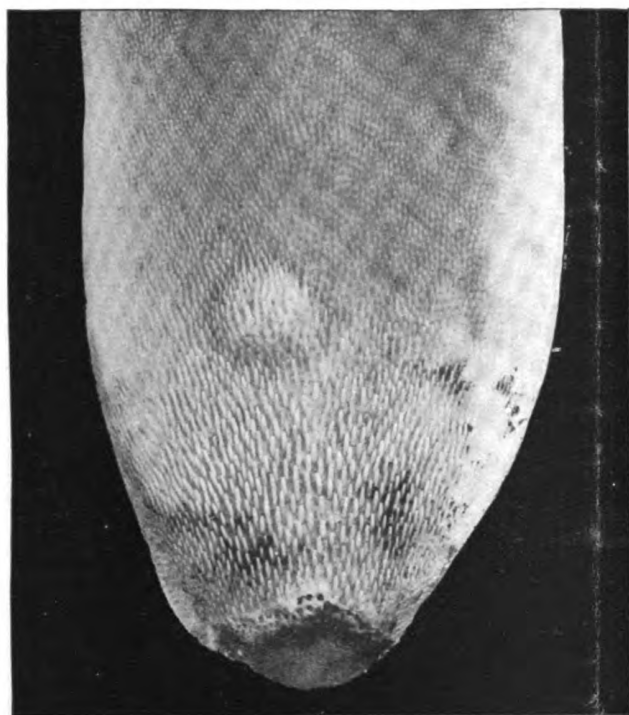


FIG. 2.—Portion of the tongue of an ox, showing early lesions of foot-and-mouth disease. The tip of the tongue shows a recently ruptured vesicle, while further back an unruptured vesicle is seen.

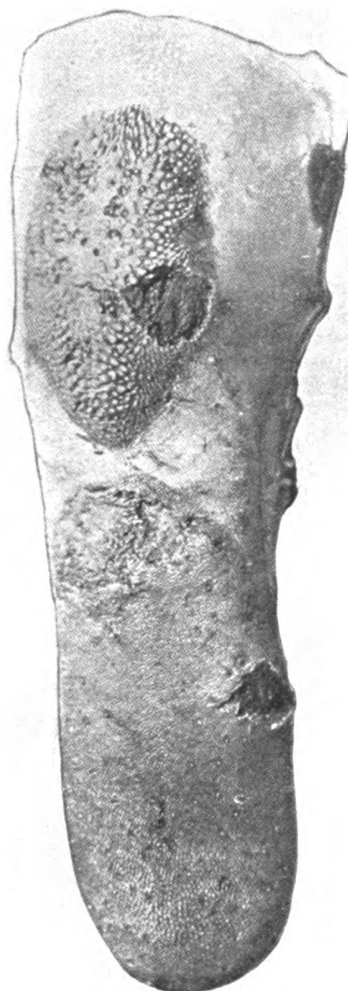


FIG. 3.—Tongue of an ox affected with foot-and-mouth disease, showing two recently ruptured vesicles and a considerable amount of scaling of the epithelial covering at other parts.

Figs. 1 and 3 are from the Report of the Departmental Committee on Foot-and-Mouth-Disease [Cd. 7270.] (London: Wyman & Sons, price 4½d.

no vnu
anagrua

with the oral sucker and their bodies are of conical or pear shape.

The family *Paramphistomidae* is sub-divided into two sub-families:—

(a) *Cladorchidae*.—Characters: with pouches present.

(b) *Paramphistomidae*.—Characters: with pouches not present.

The sub-family (a) is again sub-divided into *Cladorchinae* with their bodies pear shaped, and *Gastrodiscinae* with their bodies flat.

The *Gastrodiscinae* possess two genera:—

(1) *Gastrodiscus*.—Sub-family characters and helminths possessing a head cone.

(2) *Homalogastor*.—Sub-family characters, but the head cone is not differentiated from the body.

The helminth that is the subject of this article—*Gastrodiscus aegyptiacus* (Sonsino, called after its discoverer)—belongs to the family *Paramphistomidae*, sub-family *Gastrodiscinae*, genus *Gastrodiscus*.

The fluke possesses a cylindro-conical neck, about 2 m.m. to 3 m.m. long, the body is flattened into an elliptical disc, the ventral surface being concave and studded with numerous tubercles, each of which is supplied with a sucking disc, the dorsal surface is convex and smooth. Its length is from 8 m.m. to 15 m.m., its breadth is from 6 m.m. to 12 m.m.

Its colour in its natural state is pink, becomes white when immersed in alcohol or in a solution of equal parts of a 1 % saline solution and a saturated solution of Perchloride of mercury. When acted upon by an anthelmintic and passed out in the dung, its colour is from brown to green.

The accompanying illustration, showing the situation of the internal organs, is a camera lucida drawing of the *Gastrodiscus aegyptiacus*.

The specimen was prepared in the usual way adopted for trematodes. Collected, and washed in a 1 % saline solution to which was added an equal part of a saturated solution of Perchloride of mercury, so as to kill the fluke. It was then washed in a distilled water to get rid of the mercury. After this it was placed between two slides and pressed out by careful pressure. The slides were held together by a rubber ring being passed round at each end of the slide. The specimen was then placed for about three days in a jar containing distilled water, to which was added about 20 drops of hamotoxilin to the colour of port wine. It was taken out and the rubber rings slipped off, taken up and decolorised for about two minutes in a 1 % acid solution. It was then blued in running water, dehydrated in the following rotation—passed through 70 % alcohol, 90 % alcohol, and then into absolute alcohol. It remained in this for about three hours, after which it was taken up and cleared in creosote until one could easily make out the different internal organs. After this it was taken out and the excess of creosote taken off with blotting paper, and mounted in Canada balsam between a slide and cover glass.

W. P. B. BEAL,
Veterinary Officer, Gold Coast Colony.

ABSTRACTS FROM FOREIGN JOURNALS

CLINICAL NOTES UPON HERPES TONSURANS IN THE HORSE.

Lebrasque, having observed 97 horses out of a stud of 370 affected with *Trycophyton equinum* (Sabourand and Dassonville) has published his notes upon the disease (*Receuil de Méd. Vét. d'Alfort*.)

He describes the lesions as follows. When the flat hand was passed over the horse's coat, slight and rather rough eminences could be felt, as if a few millet-seeds were sticking in the hairs. On closer examination, it was seen that the hairs at places where these eminences could be felt were bristling. At their roots, the hairs were glued together like a paint-brush. They could easily be drawn out; and, when drawn, they left a reddish epidermis which immediately discharged a citron-yellow fluid. This soon coagulated and left a scab upon the place. These hairless places always tended to extend; and, according to their age, they ranged from the size of a pin's head or a lentil to that of a two-mark piece. The author has seen bare places which, through the confluence of smaller lesions, had attained the size of a saucer, upon which small islands of hair were standing here and there.

The bare places were found especially upon the back and the croup, and were irregularly distributed. Some were also found in the parotid region, on the anterior edge of the shoulder, and in the middle line of the front of the chest and the buttocks. The horses affected were mostly young ones in the acclimatisation period.

The author adopted a variety of treatments. Radio-activity, applied to the bare places morning and evening, was one. A single application of iodide of mercury ointment was another. A third was potassium soap applied once daily after previous washing and rubbing of the places. Another was the protoiodide of mercury (grey mercurial ointment and tincture of iodine), and the last was the mixture recommended by Sabourand.

He found all these to have different disadvantages. Radio activity, potassium soap, and the protoiodide are all very slow in exercising their effects. The iodide of mercury ointment causes extensive hairless places, so that the horses look very objectionable and cannot be used for work. The best of the treatments is Sabourand's mixture, which consists of equal parts of pure Carbolic acid, Tincture of iodine, and Chloral hydrate, but this has the drawback of being somewhat caustic in its action. The author, therefore, altered the proportion of its constituents, and used fifteen parts of Carbolic acid, twenty-five of Tincture of iodine, and ten of Chloral hydrate. He applied this mixture in the following manner.

The hair was clipped, so as to expose all the hairless parts, and the skin of the lesions was well cleansed with ether. The mixture was then painted on once daily for three successive days. This caused

the formation of a brown scab, which was allowed to remain adherent for about a fortnight. A softening application (Oxide of zinc ointment) was then used, upon which the scab fell off and left the skin covered with fine hairs. Washings with soap and water completed the cure after about three weeks. In addition to curative treatment, the author, of course, took measures to prevent the spread of infection; and these followed the well-known lines.

Horses undergoing Sabourand's treatment can be worked quite well, so long as care is taken to keep their harness and rugs away from healthy horses.—(*Berliner Tier. Woch.*)

ANKYLOSTOMIASIS IN DOGS IN SIERRA LEONE.

A report upon this subject by W. Yorke and B. Blacklock, being the fifth report of the thirty-second expedition of the Liverpool School of Tropical Medicine, has lately appeared (*Ann. Trop. Med. and Parasit.* 1915, July 31, Vol. 9, No. 3, pp. 425-427).

Of seven dogs examined by the authors all were found to be infected with ankylostomes, but two species of parasites were encountered—*Ankylostoma caninum* and *Ankylostoma ceylanicum*. These species were easily distinguished by the arrangement of the teeth. In the former there are three pairs of ventral teeth, and in the latter one large ventral pair and a second very small pair close to their base.

The rays of the lateral lobes of the caudal pouch are the same in the two species, but in the median ray of the dorsal lobe there is a slight difference. In both species the ray is bifurcated in the terminal third, each branch being tridigitate at the extremity. In *Ankylostoma caninum* the digitations are separated from each other by mere notches, while in *Ankylostoma ceylanicum* the outer notch is quite deep and cleft-like. The males measure about 6 to 7 m.m., and the females from 7 to 14 m.m.

No opportunity offered to ascertain whether *Ankylostoma ceylanicum* occurs in man in Sierra Leone.—(*Trop. Vet. Bulletin*).

A RARE CASE OF HERMAPHRODITISM.

Hambach, of Nerochau, has recorded this case. In the summer of 1913, he was shown a small yearling pig. At first sight, the animal seemed to be a female, as the lips of the vulva could be recognised quite clearly. Closer examination, however, showed a rudimentary penis in the shape of a corkscrew-like body imbedded between the vulvar lips, and projecting out about 1-1/5 in. from the vulva. Testicles could not be demonstrated externally.

In November of the same year, the pig showed suspended appetite. Partly upon this account, and partly also because hermaphroditism was suspected, slaughter was decided upon. The post-mortem examination revealed the following conditions:—

The vagina and uterus were well developed. The uterus possessed two ovaries, and two well developed testicles were united to the ovaries. Both the fallopian tubes and the spermatic duct ended in the vagina. Both the male and the female sex

were thus fairly distinctly represented. The flesh possessed the odour peculiar to that of boars and cryptorchids.

Pus was found in the uterus, and peritonitis was also present.—(*Berliner Tier. Woch.*)

W. R. C.

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

[NATIONAL V.M.A.—SOUTHERN BRANCH].

A General Meeting was held on Friday, Nov. 26, at 50 Friar Street, Reading, the residence of the Hon. Sec. and Treasurer; those present were: Mr. J. C. Coleman, (Swindon) President; Messrs. J. Willett (London), W. T. D. Broad (Marlborough), Vice-Presidents; R. J. Verney (Oxford), J. M. Parker (Faringdon), H. S. Dunn (Reading), and G. P. Male. Letters and telegrams of apology were received from Messrs. S. H. Slocock, G. E. King, F. H. W. Cundell, John Varney, H. G. Lepper, Frank Bazley, W. A. Hancock, J. R. Baxter, Jas. East, and G. H. Williams.

CONDITIONS OF SERVICE.

Arising out of the minutes, Mr. Male recalled that at the last meeting a discussion took place on a letter from Mr. F. Bullock, Secretary of the Royal College. Mr. Willett then proposed, and Mr. Verney seconded, a resolution that the Hon. Sec. be requested to forward copies of the documents received, together with a covering letter to each member, and at his discretion, to practitioners in the area who were not members, with a view to a special meeting being called, if necessary, to jointly discuss the whole matter. He had several replies expressing willingness to help neighbouring practitioners in any way possible if called upon, but he had had no request for help; so that it had not been necessary to call the special meeting.

The PRESIDENT said that, without being asked, their friend, Mr. Parker, had been doing for him what he could, and he was much obliged to that gentleman.

THE PUPILAGE OF STUDENTS.

The HON. SEC. read a letter from the Hon. Sec. of the Eastern Counties V.M.A., enclosing copy of resolution passed at the annual meeting of that Association on the 9th March, 1915.

Mr. WILLETT said the matter was thoroughly discussed at the meeting of the Central Association, when a resolution was passed that they were quite in agreement that such action was desirable, and would be willing to agree that it should be compulsory during the college career of students, but that they could not endorse the resolution in the form submitted.

The HON. SEC. thought, personally, that it would be a big mistake to send a man when he left school for a year into practice. He would get out of the habit of study and acquire a disinclination for books. (Hear, hear).

Mr. WILLETT added that, in his opinion, instead of a fellow "slacking" through the vacations, he should be forced to go through some practice. There were now very few students and there should be no difficulty in finding opportunities for practice.

The PRESIDENT proposed, "That this Association is in accord with the Eastern Counties Association, in so far that a compulsory pupillage of twelve months is necessary, but is of opinion that this should obtain at any time before pupils are granted their diploma."

This was seconded by Mr. PARKER, and carried.

The Hon. Sec. read a letter from Mr. Wm. Shipley, of Gt. Yarmouth, resigning his membership of this Association, owing to the war, adding that he hoped the time would come when he could again attend the meetings. Mr. Male said he wrote Mr. Shipley, expressing regret, appreciating his reasons for resigning, and hoping that when the war was over he would see his way to rejoin. His presence at their meetings, he added, although not frequent, had been much appreciated by all the members, and he would at all times be welcomed by them, either as a visitor or member. They were going to have a dinner when victory was won or peace declared, when they hoped to see Mr. Shipley among them. (Hear, hear).

Mr. WILLETT moved, and Mr. VERNEY seconded, that Mr. Shipley's resignation be accepted with regret, and that the meeting fully endorses Mr. Male's letter to that gentleman. Carried unanimously.

ELECTION OF OFFICERS.

The PRESIDENT proposed that Mr. Willett be elected President for the ensuing year.

Mr. MALE seconded with much pleasure, and the resolution was heartily passed.

Mr. WILLETT, returning thanks for the honour, said he feared his year of office would not be a very full one, but he hoped that during the year they would have that bumping peace dinner they were thinking of. (Applause).

Vice-Presidents. Messrs. W. A. Hancock, W. T. D. Broad, J. M. Parker and J. C. Coleman were unanimously appointed, on the motion of Mr. WILLETT, seconded by Mr. DUNN.

Hon. Auditor. On the proposition of Mr. WILLETT, seconded by Mr. VERNEY, Mr. Percy J. Simpson (Maidenhead), who is on active service, was heartily re-appointed, the Hon. Secretary being requested to ask another member to fill Mr. Simpson's place during his absence.

Hon. Sec. and Treasurer. The PRESIDENT, in moving that Mr. Male be re-elected, said that gentleman was absolutely the backbone of their Association. (Hear, hear). He had skilfully piloted them through a most stormy time. (Applause).

Mr. WILLETT had much pleasure in seconding the resolution, which was passed with acclaim.

Mr. MALE observed that after the very kind remarks which had been made he could not refuse to continue in office, although he really felt that some fresh blood ought to be introduced. Things had been very difficult with Mr. Coleman away; but if they did not mind the Association just running on as it was now he would be very pleased to do his best. (Applause).

ANGLO-FRANCO-BELGIAN VETERINARY RELIEF FUND.

The Hon. Sec. submitted the circular on this subject which had already been printed in *The Record*, and reported that copies had been sent to every member of this Association.

The PRESIDENT thought that, instead of subscribing from their funds, each member should be asked to canvass his friends, as they were doing for the wounded soldiers and other objects. They had among horse owners men who appreciated the work of the veterinary profession, and would no doubt assist.

The Hon. Sec. asked whether the medical, legal, and other professions were getting up special funds for the relief of the Belgians? There were veterinary surgeons in Serbia, Russia, France, and other countries, who also wanted relief. (Hear, hear). While the Association wished, no doubt, to show sympathy with the present appeal, the funds would not permit of a very large subscription.

Mr. WILLETT proposed, Mr. PARKER seconded, and it was unanimously agreed, that the Association make a contribution of £5 5s. to the Fund, and express the hope that individual members would also subscribe.

[An interval was then called, during which tea was served].

IMMUNISATION EXPERIMENTS AGAINST EPIZOOTIC ABORTION.

Mr. R. J. VERNEY, on the resumption of business, opened a discussion on this important subject. He began by saying that contagious abortion was due to the abortion bacillus, which gave rise to the contagion and caused the foetus to be discharged before the proper time. The bacilli, he was convinced, almost invariably got into the system through the mouth, from contaminated food or water; and heifers and second-calf cows seemed to be mostly affected by it. The premonitory symptoms were a slight discharge from the vulva—it might be for a day or two, or only for a few hours. The discharge contained the bacilli, and the aborted foetus and the uterus also contained bacilli, which were also in the intestines when the aborted foetus was born alive, and were sources of danger and infection.

The bacillus retained its vitality for a length of time, if not destroyed by disinfection, and so contaminated food and water. The aborted animal had a discharge for some time after, and should be carefully isolated until the discharge ceased. Contaminated litter and utensils, such as forks, spades, brooms, wheelbarrows and the like, should be rigidly disinfected; and the aborted foetus should be burned, or buried in a good quantity of lime.

The county of Oxford became yearly more and more important in regard to the production of milk. The returns of the Board of Agriculture for 1911 showed the number of cows and heifers in that county to be 23,824, of which 16,390 were in milk; and the disease caused great inconvenience as well as monetary loss to dairy farmers. They got so sick of the prevalence of abortion that they requested, through the County Council, advice from the Board as to the best methods to adopt for its prevention, and, if possible, its eradication. Mr. P. Elford, the education lecturer, and Mr. G. R. Maud, staff instructor in agriculture, after discussing those applications, came to the conclusion that it was advisable, before asking the Education Committee to start any experiments, to wait and hear if the methods of immunisation which were being tried by the Abortion Committee appointed by the Board of Agriculture were successful. The reports from Cornwall were considered to be so satisfactory that it was decided to ask the Board of Agriculture if they would be willing to supply the material for the conduct of experiments in Oxfordshire. The Board offered to supply the vaccine free of charge to inoculate cows in infected areas, the local education authority employing veterinary surgeons to do the inoculations, and undertaking to keep complete records of each animal inoculated. The owners of infected herds expressed their readiness to carry out the observations. A meeting was held on the 5th April, 1911, between owners of herds and their veterinary surgeons, etc., to discuss the matter; when Mr. Jackson (Secretary to the Abortion Committee of the Board of Agriculture), read a paper on the experiments being conducted by the Board, and it was decided to carry out immunisation experiments. Fourteen infected herds were chosen for these experiments from the following:—

(1) Herds where above twenty per cent. of the cows aborted in the year previous, and where the disease had been prevalent for several years.

(2) Herds where less than twenty per cent. of the cows aborted in 1910, but in which cows regularly aborted each year.

(3) Breeding herds where practically no outside animals were brought in.

(4) Herds where little or no rearing was done, and in which cows were continually being bought in for milk.

Instructions were then sent to the veterinary surgeons as to the way in which the Board of Agriculture required the inoculations to be done.

Two methods of immunisation were employed:—

(1) Non-pregnant cows or heifers with Anti-abortion A.—(Living culture).

(2) Pregnant animals with Anti-abortion B.—(Dead culture).

Anti-abortion A. was injected into non-pregnant heifers or cows two months before being put to the bull.

Heifers usually done, but all empty, whether aborted or not, should be done. 25% of the empty cows or heifers should be left as *controls* for comparison. The history of each cow or heifer immunised should be recorded.

Anti-abortion B. injected into pregnant animals monthly, the first injection immediately after they have ceased balling after service, until seventh month of pregnancy. No first injection should be given later than the first month of pregnancy.

Mr. G. R. Bland accompanied each veterinary surgeon on these inoculations and kept a record of all the animals injected, and, as far as possible, all the results. He (Mr. Verney) had to thank Mr. Bland for supplying him with the collective work of these experiments in the fourteen herds selected and treated.

Table showing number of animals under each treatment and how they calved.

Treatment.	Heifers.	Cows.	Animals.	Barren.	Abort'd.	Calved
Anti-Abort'n (A)	70	193	263	22	15	226
Anti-Abort'n (B)	0	112	112	12	17	83
Controls	51	245	296 * 13 (known)	54	229	

* At first 167 controls were left, and of these 13 were barren. Later the number of controls was increased to 296, and number barren is not known.

Summary of Results.

Before experiments during 1910	(about)	1 in 4 aborted.	29.2 %
After (A)	"	1 in 18	† 5.7
After (B)	"	1 in 7	15.1
Controls	"	1 in 6	18.2

† [The 22 barreners are credited to the inoculation. If they are deducted the figures are 241:15 = 6.224%, about 1 in 16. Ed. V. R.]

When it is considered that there was a tendency to inoculate all the animals thought most likely to abort, and that the animals under the A treatment were on average younger than the controls, and, therefore, more likely to abort, the results are on the whole much in favour of the A treatment.

In most herds it is the exception for a cow which has once aborted to be kept and bred from again. Sixty-six cows which had aborted in 1910 were inoculated.

Under (A)	48	12 barren	2 aborted	24 calved.
Under (B)	13	2 "	6 "	5 "
Controls	10	4 "	4 "	2 "
Under (A)		1 in 21 aborted again		4.6 %
Under (B)		1 in 3		46
Controls		1 in 3		40

A great deal of trouble had been experienced on some of the farms owing to the number of heifers aborting. When the trouble was greatest more of the heifers were inoculated and fewer controls left.

Under (A)	70 heifers	5 barren	4 aborted.
Controls	51	4 "	7 "
	1 in 17 aborted under (A)		5.7 %
	1 in 7 of the Controls		13.7

At the end of 1913, at a general meeting of owners and others interested, it was unanimously decided to

ask the Education Committee to continue the A treatment, the owners to pay for veterinary services; and the Board offering to continue to supply vaccine.

During the last 18 months over 1200 cows and heifers have been inoculated, *i.e.*, about 5% of the total in-calf heifer and cows in the county. This shows how prevalent the disease is.

The 1913 report is only preliminary. Results indicated in it have been confirmed by continuance of the work, and, as far as obtained, promise to be quite as satisfactory.

1915. Results in 11 herds.

Under (A)	277 cows inoculated	9 aborted.
Controls	126	29 "
1913. Before experiments,	about 1 in 3	aborted 35 %
After (A) treatment	" 1 in 31	" 3.2
Controls	" 1 in 5	" 23

1913. Aborted Cows.

Under (A)	49	aborted again	2	1 in 25	4 %
Controls	8	"	1	1 in 8	12

The results are considered very satisfactory by all concerned, and are still proceeding; but only the A injection is now used.

It has since been ascertained that, on one farm, of
20 under (A) none aborted.
10 Controls 3 aborted.

also that of 15 heifers under (A) none aborted,
of 15 heifers Controls 12 aborted.

They had not carried out any agglutination tests under the County Council of Oxfordshire, but he thought that body was the first county council that had taken steps at all. Their friend, Mr. Parker, had had something to do with agglutination tests. In Oxfordshire they were continuing their immunisation system, and would have another lot of results tabulated in a short time. (Applause).

Mr. PARKER said they started the agglutination test with a herd of 300 cows on different farms, took samples of blood from all, and sent them to the College. The foetus from every animal that aborted was destroyed, and the uterus washed out with corrosive sublimate or boracic acid, and antiseptic pessaries were inserted. None of them were put to the bull until two months after calving, and they were all previously injected with the live bacilli. He never used any dead bacilli; but he inoculated, roughly, about 500 cows and heifers, and never had one that did not carry its calf up to the full time. The only abortion was the case of one "control." The people in his district were very keen on the treatment with live bacilli; one man having 60 heifers so treated, all of which stood.

Mr. VERNEY added that the County Council of Oxfordshire had now made it known that farmers in the county who were troubled with contagious abortion had only to apply, and they would get the serum from the Board, who send an inspector out, and pay everything else.

Replying to Mr. Broad, he said that in Oxfordshire they had not separated their cows at all.

Mr. PARKER said he put all cows under the agglutination test as fast as he could do them. They were shifted to what was practically an abortion farm. They inoculated all the heifers and cows two months before they were put to the bull, whether they passed the test or not. They had very valuable cattle indeed on that farm. They used the ordinary horse syringe for the injections.

Answering Mr. Willett, Mr. Parker said they did not inoculate the bull at all. He had had cases in his district where cattle had not been inoculated at all, and had found that in about three years the disease would wear itself out.

The PRESIDENT said he was sure they would all join in thanking Mr. Verney for his paper. (Hear, hear). He (Mr. Coleman) had been somewhat sceptical about the inoculation treatment for abortion. As far back as 1887 he recognised it as being of a contagious nature. In the case of one farm, with 52 cows, he suggested that the bull should be syringed immediately before service. The consequence was that not one got in calf; and so it occurred to him that the syringing was killing the spermatozoa at the same time. He then allowed one cow to come into oestrus, and then injected Chloride of zinc sol. After the bull had served the cow the sheath was thoroughly washed out, and the result was that 51 cows calved, with only one abortion, and that was in the case of a cow that had got out and been served by a bull on another farm. For the last four years he had been using Chinosol for injection. He thought a great deal of the bacilli were carried by one bull. In ordinary cases a cow aborted, and, when served, the bull became contaminated. He had been doing as he said ever since 1887, and during all that time had made careful notes. He asked whether sufficient precautions were taken in regard to the bull, and particularly when cows were aborting the bull was changed.

Mr. VERNEY said they had not done so in his experience.

Mr. MALE thanked Mr. Verney for opening the discussion on these immunisation experiments, a matter which had been ventilated in the public press; but, as far as he knew, the veterinary profession as a whole had not taken so much notice of it as it deserved. Mr. Verney having been much interested in the matter, he had asked him to open the discussion that day. He (Mr. Male) would be interested to know about what the cost was per cow. In Berkshire they were starting experiments on somewhat similar lines to those which Mr. Verney had described for Oxfordshire. Some time ago he was consulted about it, and he strongly advised that it should be done. It was a question whether county councils should pay, whether the farmer should pay, or whether each should pay part of the cost of those experiments. It was a little difficult to estimate the cost. Some farms might be a long way from the practitioner, and so would cost more. His suggestion was that the farmer should pay so much per cow, and the county council all other expenses. He thought the Veterinary Department of the Board had not been given sufficient credit for this system of inoculation. At meetings that had been held they had never heard a word of praise for the Board. It had been "slanged" on every possible occasion, but now they had a good thing they got no credit for it. As a matter of fact the Veterinary Department had prepared the abortin, laid down the rules and regulations as to its use, and had insisted on the necessity of veterinary surgeons being employed to carry out the inoculations.

In a pamphlet for farmers drawn up by the Berks County Council Instructor he was glad to say that due acknowledgement had been given. (Hear, hear).

Mr. Male asked if members had known any cases of inoculated cows to which large doses of living bacilli had been given spreading the disease to healthy cows.

Mr. VERNEY replied in the negative. There were one or two cases they did not find out at the time—cows and heifers which they thought to be empty were inoculated, but they did not abort.

Mr. MALE: If these bacilli when injected once confer immunity, how do you reconcile with it the fact that cows can have the bacilli in the uterus for months when naturally infected and yet it does not appear to confer immunity, as they sometimes go on aborting for two or three times? Is the natural immunity less powerful than the artificial one?

Mr. BROAD stated that he had found the agglutination test for abortion very useful in practice. He found

the operation of removing samples of blood was much facilitated if the needle had been immersed in oil.

MEMBERS ON ACTIVE SERVICE.

The Hon. SEC. raised the question whether members on active service, of which there were fifteen, should be asked to pay their subscriptions.

After a brief discussion, it was unanimously agreed, on the motion of Mr. WILLETT, seconded by Mr. MALE, "That members of the Association on active service be granted the option of becoming honorary members during their period of service; and if they wished to avail themselves of this privilege they should communicate with the Hon. Sec. and Treasurer."

NEXT MEETING.

The Hon. SECRETARY said if the members desired it he would be very pleased to have the next meeting held at his house, and also any future meetings so long as the war lasts. (Applause).

Mr. PARKER moved that Mr. Male's kind offer be gratefully accepted; and that the meeting wished to place on record their thanks to Mr. and Mrs. Male for their kindness and hospitality on this occasion.

Mr. VERNEY seconded the resolution, which was carried by acclamation.

T.F.

The PRESIDENT brought to the notice of members the disabilities under which the Territorial veterinary officers were suffering, and, after discussion, he proposed that a vote of thanks should be sent to Mr. Garnett, President of the Royal College of Veterinary Surgeons, for the steps he had taken in the interests of these officers, which he felt sure would be appreciated by them and the whole profession. This was carried unanimously.

PETROL TAX.

Mr. MALE thought that all the members would wish to show their appreciation to the Chancellor of the Exchequer for allowing a reduction in the petrol duty to veterinary surgeons, and also to those Members of Parliament who had striven so hard to bring about this. He proposed that a letter should be written to those gentlemen expressing the thanks of the members of the R.C.V.M.A. This was agreed to.

A hearty vote of thanks to the President, Mr. Coleman, for his able conduct in the chair that day, and for his great service to the Association during his two years of office, concluded the meeting.

PARLIAMENTARY.

In the House of Commons on Thursday, Dec. 2.

VETERINARY SURGEONS (PROMOTIONS).

Mr. Newdegate asked the Under-Secretary for War whether he is now in a position to announce that the same rate of pay and the same regulations as to promotion will be granted to veterinary surgeons holding commissions in the Territorial Force as are granted to those holding commissions in the New Army; and whether he will explain why, owing to the present differentiation of treatment in the two branches of the Service, veterinary surgeons in the New Army have quite recently received promotion to captain's rank after one year's service, regardless of their professional experience, whereas veterinary surgeons in the Territorial Army are ineligible for promotion till they have served five years.

The Financial Secretary to the War Office (Mr. Forster): I regret I am not yet in a position to make a further statement, but hope a decision will very shortly be reached.

Mr. Newdegate: Is the hon. gentleman aware that this question has been asked since last June, and that every day men are being, in the opinion of many concerned, unjustly promoted over the heads of others owing to this unfair preference?

Mr. Forster: I am doing everything I can to expedite a decision.

December 8th.

Mr. Newdegate asked the Financial Secretary to the War Office whether he can now announce that arrangements have been made to grant the same scale of pay and the same incidence of promotion to veterinary surgeons of the Territorial Forces as are granted to veterinary surgeons in the New Army?

The Financial Secretary to the War Office (Mr. Forster): I regret I have nothing to add to the answer which I gave to my hon. friend on the 2nd instant.

Mr. Newdegate: Is it the case that this matter has been hung up by the Treasury officials, and that the War Office are prepared to grant this concession to veterinary surgeons serving in the Territorial regiments?

Mr. Forster: I think I had better say nothing more at present. I hope to be able to announce a decision before very long.

The supply of Horses for the Army.

The report of the committee appointed to consider what steps should be taken in England and Wales to secure an adequate supply of horses suitable for military purposes was issued on 8th inst. as a Parliamentary paper. The committee recommend:—

That the Board of Agriculture should (1) institute legislation to require compulsory annual registration of stallions; (2) increase the number of King's Premium stallions; (3) arrange for the inspection of stallions recommended for the Board's Premiums; (4) continue the brood mare scheme in those counties in which it has proved a success; (5) purchase stallions suitable for country service; (6) provide funds for the award of prizes for brood mares and foals; (7) arrange for a compulsory annual census of horses and for more complete returns of horses exported and imported; (8) reconstitute the Advisory Council and County Committees; (9) appoint an expert staff of officers to supervise the scheme.

That the War Office should (1) purchase a much larger number of horses in England and Wales; (2) increase their horse peace establishments; (3) purchase more horses direct from breeders; (4) purchase remounts when rising four; (5) purchase specially selected fillies and leave them with breeders until they have produced and reared foals.

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donations are reported:—

Mr. G. P. Male, Reading	£1	1	0
Mr. Wm. Roach, Exeter	3	3	0
Royal Counties Veterinary Medical Assoc.	5	5	0
Previously reported	57	7	0
Total	£66	16	0

A fresh outbreak of foot-and-mouth disease has occurred between Bradford-on-Avon and South Wraxall, near Bath. Severe restrictions have been reimposed on the movement of animals.

Five sheep have been discovered in a snowdrift on Knott Rigg, on Buttermere Fells, near Keswick, where they had been entombed for 22 days. Three were still alive, and one was able to walk.

ARMY VETERINARY SERVICE.

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Dec. 3.

Lt.-Cols. to be temp. Cols. whilst Directors of Veterinary Services:—F. Eassie, D.S.O., G. M. Williams (Dec. 1.)

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieuts. to be temp. Capts.:—W. S. Reid, F. G. Rugg, dated Nov. 20. W. D. Connochie (Nov. 21).

To be temp. Lieut.:—J. MacIlvenna, dated Nov. 22.

Dec. 6.

Temp. Lieuts. to be temp. Capts.:—A. J. Sellers, D. O. Turnbull, dated Nov. 23.

To be temp. Lieut.:—G. H. Barber, G. W. Davidson, dated Nov. 24.

Dec. 7.

Temp. Lieuts. to be temp. Capts.:—H. S. H. Jones, dated Nov. 25. W. P. Reid, S. E. Hill (Nov. 26).

To be temp. Lieut.:—A. W. N. Pillers, F.R.C.V.S. (Nov. 25)

Dec. 8.

Temp. Lieut. to be temp. Capt.:—G. S. Thomas (Nov. 26)

To be temp. Lieut.:—H. L. Somers, dated Nov. 29.

TERRITORIAL FORCES. ARMY VETERINARY CORPS.

Dec. 9.

Maj. G. C. O. Fowler, ret. pay, to be temp. Major (Nov. 28); Maj. G. C. O. Fowler to be temp. Lt. Col. (Nov. 28).

A.V.C. Comforts Fund.—A further list is unavoidably held over.

OBITUARY

MILES HUTCHINSON, M.R.C.V.S., Howden, Yorkshire. Graduated, N. Edin.: May, 1893.

Mr. Hutchinson died on December 2nd, aged 44.

BARLING.—On Saturday, December 4th, at a Nursing Home, Cheltenham, Agnes Fanny, the wife of F. W. Barling, Bartestree Court, (and late of Ross).

FOOT-AND-MOUTH DISEASE.

BOARD OF AGRICULTURE LEAFLET No. 292.

Foot-and-mouth disease is caused by a virus which is too small to be seen by the aid even of the highest powers of the microscope, and it can pass through the minute pores of bacterial filters. Such a virus is spoken of as "filterable." Its nature is not yet definitely known, but in view of the character of the disease caused by it, the virus is probably bacterial.

Animals subject to the Disease.

Practically all the domestic animals and wild ruminants can be infected with foot-and-mouth disease. This statement, however, requires a certain amount of qualification. Cattle are usually looked upon as more susceptible to the disease than sheep, pigs, and goats, but the experience in Great Britain during the last few years has been that, given an outbreak amongst pigs or sheep, the disease spreads as rapidly as in the case of cattle. Human beings may also contract foot-and-mouth disease, though they are not in the most susceptible class. Horses, dogs, and cats have occasionally been known to contract the disease under natural conditions, but owing to the resistance they show to experimental

inoculation with the virus, and the infrequency of naturally contracted attacks of the disease amongst them, they must be considered much less susceptible than cattle, pigs, or sheep.

The degree of susceptibility varies considerably, even amongst susceptible animals, and it has not infrequently been observed that certain animals appeared to resist infection when their fellows were suffering from the disease.

Symptoms.

As the owner and attendants are often the only persons in a position to suspect the existence of disease in the first instance, the symptoms are described here to enable them to be on their guard against it, but not with the object of encouraging them to attempt to distinguish between foot-and-mouth disease and other diseases with somewhat similar symptoms. Foot-and-mouth disease is so serious to stockowners in general, that, if there is the least suspicion of its presence, that suspicion should be reported immediately to the authorities. (See last section of this leaflet, on *Reporting the Existence of the Disease*).

The incubation period after natural infection is from 48-72 hours to ten days, but the shorter periods are the more usual.

The chief symptoms of the disease are common to all affected animals, although the effects of the virus vary somewhat. In the initial stage the animals are dull, off their food, and if the temperature is taken, it will be found to be higher than normal—105° F., or even higher in cattle. At this stage, however, it is unlikely that a farmer would suspect the existence of foot-and-mouth disease.

The first symptoms of the disease to attract the farmer's attention are the sudden appearance of lameness, or slaving at the mouth, or both. Lameness in a number of animals, especially if present in more than one species—cattle and pigs or sheep, for example—should arouse the gravest suspicion. Salivation (slaving) in a number of animals or even in one animal should always be looked upon with suspicion, and should lead to an examination of the mouth. In affected cattle salivation is very frequently accompanied by a smacking or sucking sound, which is a very characteristic symptom of the disease. Slaving, however, is not nearly so noticeable in pigs and sheep as in cattle, and it is usually sudden lameness which first attracts attention in the first two. It is to be noted, also, that the lameness might escape the casual observer, as the animals are often so footsore that they remain lying down. Cattle, however, when moving, frequently shake their feet, as if trying to remove something from a hoof. Sheep, of course, will usually rise and move away when approached; if not, it probably means that their feet are very tender.

The lesions of the disease consist of vesicles (blisters) which appear on the mucous membrane, especially that of the mouth, and on the finer parts of the skin. In the mouth they appear on the pad, on the inside of the lips, and on the tongue. About the feet they are usually found around the coronet, at the junction of the skin with the hoof, at the base of the supernumerary digits, and on the soft tissue between the claws. They are also commonly found on the teats in females. Less commonly they may be seen around the muzzle, inside the vagina, and in pigs on the skin of the body. The vesicles vary in size and shape; quite commonly they are an inch in length, but they may be much smaller. They are easily broken by handling. When broken a clear liquid flows out, the mucous membrane over the vesicle looks ragged, and the under surface has a very red or raw appearance, which afterwards becomes yellow. On parts like the pad, where the mucous membrane is dense, the affected part of the mucous membrane may

be much thickened, and may remain attached after the vesicle is broken. On handling, this thickened portion of membrane comes away in the form of leathery-looking tissue leaving a raw surface. About the feet the vesicles are similar to those in the mouth, except that the covering is denser. Cattle at pasture often show rapid loss of condition when attacked, as, owing to the pain in their mouths and feet, they are unable to obtain sufficient nourishment. In milch cows the milk yield falls considerably, and when the teats are affected, injury of a permanent nature may arise in the udder. The inflammation in the feet may lead to shedding of the horny parts. This happens in the later stages of the disease, but more commonly in sheep and pigs than in cattle. Even in the earlier stages the horn can frequently be seen separating around the coronet in a downward direction in sheep and pigs. Very young calves may die from enteritis (inflammation of the bowel) without showing external eruptions.

Animals usually recover from foot-and-mouth disease, but the loss, owing to depreciation, loss of milk, or permanent injury, is considerable. Some outbreaks, however, are more virulent than others, and in a very virulent outbreak a considerable number of animals may die, usually from intestinal complications.

Infection.

The contents of the vesicles are infective, and therefore material contaminated thereby, such as saliva, hides, foodstuffs, litter, dung and milk, will also be infective. The blood has only been found to be infective in the earliest stage of the disease.

The virus of this disease is easily destroyed by antiseptics, and by such natural processes of disinfection as drying and sunlight. There can be no doubt, however, that under certain conditions which exist in nature, but which are not fully known, the virus may remain active for months, and may be carried long distances. This probably accounts for the mysterious outbreaks which have occurred in Great Britain without apparent relation to a previous case. A comparatively low temperature—55° to 70° C. (131° to 158° F.)—destroys the virus.

Infection is spread from animal to animal by the fact of the animals being together in stables or on the pastures, or by the hands of milkers, or by the hands, boots or clothes of other attendants. It may be carried considerable distances on foodstuffs, and through a water supply being contaminated. When an animal is salivating, the threads of saliva and straws contaminated thereby may be blown a considerable distance by the wind, and thus reach other animals, or a watercourse from which they drink. The roads along which affected animals have passed, and the wagons in which they have travelled, may remain infective for some time. Rats, fowls, birds, cats, horses and dogs may act as mechanical carriers of infection. It is also conceivable that human beings affected with the disease might convey it to animals. The spread of infection from place to place is most insidious. A good deal of evidence has been collected which goes to show that a human being may, through his clothes, make the clothes of others infective. There is also a considerable amount of evidence that some animals which have recovered from the disease may be infective to others for a considerable time after recovery. The virus enters the body through the mucous membranes, and probably the commonest method of infection is by way of the alimentary tract. A very small amount of material from the vesicles (1/250th of a drop) has been found sufficient to cause infection.

Prevention.

It is not intended under this heading to deal with prevention in the sense of administering so-called preventive drugs, or resorting to preventive inoculation.

There is no drug known which renders an animal resistant to foot-and-mouth disease, and science has not so far provided a practicable method which can be used to immunise animals artificially.

If the disease breaks out on any premises it is the duty of the owner to take all reasonable measures to prevent the affected or suspected animals, and those in immediate association with them, from coming in contact with those of his neighbours. Affected stock should be kept away from a public road, from a water supply which reaches other farms, and from boundary fences immediately beyond which other stock are pastured. The attendants should be warned not to go amongst other cattle, sheep, goats or pigs, and all persons who have to leave the premises should disinfect their boots before doing so, otherwise they may carry infective material on to the roads or elsewhere. The boots should be scraped to remove particles of manure, and afterwards they should be swabbed with an ordinary disinfecting solution. If such is not available a saturated solution of common salt in hot water may be used. Milk should not be allowed to leave the premises, nor should it be given to other animals on the premises, unless it has been previously boiled. Dogs and poultry should not be allowed to roam at large.

The above precautions apply mainly to the owners of infected premises and any persons for whom they are responsible. It may happen, however, that other owners or their employees may find themselves on suspected premises before an outbreak has been declared. In such circumstances they should carry out the above-mentioned measures of disinfection, and they should refrain from attending to other animals until they have further

disinfected their hands, and changed their boots and clothes.

Reporting the existence (or suspected existence) of the Disease.

The attention of stockowners is directed to Section 4 of the Diseases of Animals Act, 1894, and Article 1 of the Foot-and-Mouth Disease Order of 1895, which in effect provide that every person having or having had in his possession or under his charge an animal affected with or suspected of foot-and-mouth disease shall with all practical speed give notice to a police constable.

The object of immediately reporting any suspicious case is to enable the authorities to have immediate inquiry made, and, if disease is found to exist, to isolate it, and stamp it out before it can extend throughout the country. As the result of the disease spreading in 1869, it persisted in Great Britain until 1872, and it is estimated that 3,000,000 animals were attacked. An estimate was made of the losses sustained from the disease between 1870 and 1877 in Northumberland and Westmorland alone; in that period there were 9,035 outbreaks in these two counties, 236,755 animals were involved, and the loss was about £301,400.

The disease spread again in 1881-1884. In Great Britain 26,484 outbreaks occurred and 710,362 animals became affected, of which 9,361 died and 5,874 were slaughtered.

Copies of the leaflet may be obtained free of charge and post free on application to the Secretary, Board of Agriculture and Fisheries, Whitehall Place, London, S.W. Letters of application so addressed need not be stamped.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.		Outbreaks	Slaughtered.*
	(a)		(a)		(b)		(b)			(a)	
Gr. BRITAIN.											
Week ended December 4	18	18	6	20	1	3	34	86	13	62	134
Corresponding week in											
1914 ...	15	15			3	4	†	†	5	87	574
1913 ...	20	20			9	10	33	59	13	53	437
1912 ...	12	13	1	6	1	1	49	95	20	53	526
Total for 49 weeks, 1915 ...	546	613	55	691	48	85	||804	||1742	201	3776	16022
Corresponding period in											
1914 ...	679	740	24	124	94	279	†1530	†2642	193	4143	38342
1913 ...	548	601	1	23	148	345	2243	4401	192	2387	29958
1912 ...	713	807	93	645	166	305	2684	5649	275	2781	37838

† The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked: —

Stafford 1, York, West Riding 1, Lanark 1.

Board of Agriculture and Fisheries, Dec. 7, 1915.

|| Figures for thirty-six weeks only.

IRELAND.		Week ended Dec. 4		Outbreaks	...	8	2	32
Corresponding Week in {		1914	...	...	...	...	...	...	...	1	8	2	24
		1913	...	...	...	...	...	...	...	...	21	2	8
		1912	1	13	2	3
Total for 49 weeks, 1915		...	2	2	...	...	1	3	68	386	238	1339	
Corresponding period in {		1914	...	1	1	76	957	...	...	75	462	187	94
		1913	...	...	...	...	...	1	1	112	495	132	86
		1912	...	3	3	68	382	...	...	61	350	206	66

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Dec. 6, 1915

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1432.

DECEMBER 18, 1915.

VOL. XXVIII.

THE HORSE SUPPLY.

This month has witnessed two events, both of which will probably have far-reaching effects upon English horse breeding. One is the publication of the report of Lord Middleton's Committee upon the supply of army horses; the other, the acquisition by the Government of Colonel Hall Walker's breeding establishment.

The Committee's report has appeared with a promptitude which suggests appreciation of the urgency of the question. Its recommendations are numerous; and it will be noticed that, taken collectively, they advise a very considerable outlay by the State. More than this, it is fully recognised in the body of the report that hitherto the Government has spent far too little upon horse breeding.

Along with its recommendations for future State expenditure, the report contains not a little condemnation of past State parsimony; and this is not its least valuable feature. The recommendations appear good; but one thing must precede their adoption—the Government must recognise the necessity for spending money freely. The very nature of the recommendations will do something in this direction; and other portions of the report should do more.

Discussion of the acquisition of Col. Hall Walker's establishment is rather premature. The acceptance suggests the intended formation of State breeding studs. This is the Continental system, which we might well follow; but the speedy creation of National studs large enough to meet our requirements is well-nigh impossible. Very probably, for some years at least, our army horses will be supplied from two sources—from State studs, and from private breeders under some such scheme as that outlined by Lord Middleton's Committee. However, that may be, we at least have now good ground for hoping that the period of neglect by the Government of horse breeding is at last over. The Committee's report will teach the Government something; the experience of the war is in the same direction; and the arrangement with Col. Hall Walker suggests that they have already learned that an increased future expenditure is unavoidable.

A PROFESSIONAL ADVANCE.

Exigencies of time and space last week left the note on the *Journal of the American V.M.A.* incomplete: there is a little more to be said. The management is in the hands of a Committee, of which F. Torrance is Chairman; A. Eichhorn, Secy.; C. J. Marshall, W. R. Blair, R. A. Archibald, M. Jacobs, N. S. Mayo, G. R. White, V. A. Moore, L. Frothingham, C. H. Stange, H. Jensen, G. H.

Roberts, and R. P. Lyman. And a Sub-committee of three;—C. J. Marshall, Chairman; R. P. Lyman, A. Eichhorn, Secretary, with Pierre A. Fish, of Ithaca, N.Y., as Editor and Publisher.

It is issued on the 1st of each month. The foreign subscription is \$3.60, single copies 30 cents plus postage.

No. 3, New Series (December) is to hand this week, and so far maintains its character. Necessarily the strain comes with continuance; but it is possible that with a small but strong committee some of the difficulties of management may be overcome. One which tends to deterioration, and which has emasculated other "Association" journals, is the claim of the subscriber, to have his productions inserted, although their professional value may be of the smallest and their literary quality simply an advertisement of his unfitness. That the constitution of such a journal contains elements of usefulness and of success is unquestionable; but it is more than difficult to maintain that professional cohesion, and the steady influx of new contributors which are necessary to achieve the best results.

POISONING BY WOODY NIGHTSHADE

(Active principle Solanine).

Four cases of the above came under my observation at close intervals recently, occurring upon the same farm.

1. Shorthorn cow showing undue excitement muscular tremors, and incoordination, difficult to approach and extremely nervous, respirations slightly hurried, pulse and temperature normal, profuse salivation. Recovery occurred in the course of ten days.

2. Down on arrival, no salivation, excitement less marked, pulse normal, temperature subnormal. Between the interval of my visit the owner himself injected the udder, being the possessor of a very elaborate milk fever outfit. Next day the cow rose, and made a complete recovery about the fourth day. Appetite-rumination had ceased in both cases for the first few days.

3. Heavy milch cow on being brought up from the field for milking, and showing the preliminary symptoms fell heavily down, thought by owner to have had a fit. When seen she was stretched out on her side, intensely excited, nervous, eyeballs upturned, but perfectly conscious; extremities cold, pulse slightly accelerated, temperature markedly subnormal, no salivation as in previous case. This

being a fat animal I hesitated whether to treat her or not, but by desire of the owner this was attempted. With only great difficulty could she be kept in a sitting posture, the head falling to the side, in fact it seemed impossible for her to keep it up, although perfectly conscious the whole time. No improvement occurring during the next 36 hours she was destroyed and dressed by the butcher.

4. This case occurred the same evening, when my services were again requisitioned. The animal showing similar symptoms to the last, but not so pronounced; struggling about on the ground and making futile attempts to rise. The following morning she had struggled upon her feet, but again fell. Within the next twenty-four hours she was up, and had recovered in a few days.

Remarks. The cases occurred during the latter part of September and first week of November. The owner informed me that the previous year, about the same time, he had two cows both affected in the same manner, and both having to be slaughtered. Poisoning was suspected, and a search was made around the farm, when the owner discovered growing in the hedges a tall, thickly-stemmed solanaceous plant bearing large berries, some red, others yellow, which he thought to be deadly nightshade. On taking a specimen of this to the R.V.C., Dr. Lander's assistant kindly confirmed it as woody nightshade, and explained that its active principle was solanine, that analysis of the ingesta would be unsatisfactory, the presence of the active principle being difficult to determine. Another authority informed the owner the condition was a recoverable one, and that cows so affected should not die: the owner being still of the opinion that the third cow would have recovered if given time.

In none of the foregoing cases was there dilatation of the pupil.

The dressed carcass of the third cow set well, and the flesh was of a good colour, but when a wooden skewer was deeply inserted into the muscle and withdrawn gave a peculiar odour, as also portions of the meat when cooked, which on comparison with that of a freshly broken stem of the plant were identical.

Strong cathartics were administered at once in each case, constipation being a feature in each, and bromides administered. By special desire of the owner the udder of the third cow was inflated, but without result.

GEORGE YATES.

1, College Road, Harrow.

ABSTRACTS FROM FOREIGN JOURNALS.

POISONING IN HORSES BY GROUND IVY.

Fe Renczhazsy reports that he has observed nine cases of equine poisoning from ground ivy (*Glechoma hederacea*)—(*Recueil de Méd. Vét.*) This plant is common in woods, and flowers in May and June. It causes poisoning in horses, while cattle and sheep are not at all affected by it.

The toxic symptoms observed by the author were

—an anxious expression, dyspnoea, salivation, sweating, dilatation of the pupils, cyanosis, and signs of pulmonary oedema.

The author bled the animals, and then gave camphorated injections. He also gave castor oil internally, and followed this up with tannin in mucilaginous water. Six horses recovered and three died. Pulmonary oedema and cerebral hyperæmia were found post-mortem; but the digestive tube showed no lesions.—(*La Clinica Veterinaria*).

[Ground ivy is a widely distributed plant. It is found throughout Europe and Central and Russian Asia, except in the extreme north, and it extends eastward to Japan. It is very abundant in Britain. Other scientific names for it are *Nepeta glechoma* and *Nepeta hederacea*. Pammel, in his encyclopedic *Manual of Poisonous Plants*, quotes D. Schaffner as stating that ground ivy is said to be poisonous to horses, and adds that the plant contains a volatile oil and a bitter principle. I do not know of any record in veterinary literature of poisoning by it, except the note above.—*Transl.*]

A BOVINE METABOLIC DISEASE DUE TO MALNUTRITION.

For a long time past, a peculiar disease of cattle has been prevalent in the ore-containing mountain districts of Saxony. The affection is strictly a local one, and is often limited to particular farms. The symptoms are peculiar, the chief ones being those of "licking disease" with fragility of the bones, both of which indicate severe disturbances of metabolism. Haubner, in the first place, and Lötsch and Lange afterwards, have investigated this disease; and the two latter workers, in a paper published in 1912, appear to have elucidated its etiology (*Zeitschr. f. Infektionskr. u.s.w.*)

They find that the essential cause of the disease is the food growing in the district. The cattle are fed for the most part upon hay; and the hay is grown upon a ground poor in nutritive salts, which can only be attributed to defective manuring. The defective manuring arises from an irrational storage and preservation of natural manure, and also from the fact that the inhabitants of the district, on account of poverty, make only a very limited use of artificial manures. The climatic conditions prevailing in the district (frequent and long-continued rains) cause bad harvests. The cattle are badly housed, are fed throughout the long winter almost exclusively upon hay, which is often ill-won. They, therefore, suffer first from digestive disturbances, and finally from disturbances of nutrition especially arising from a deficiency of nutritive salts. The affection is, therefore, a severe disease of metabolism, caused by food which is poor in nutritive salts and often also very indigestible, as a consequence of which alterations of the bone tissue may appear.—(*Berliner Tier. Woch.*)

THE VALUE OF HORN-RINGS IN ESTIMATING AGE.

It is a well-known practice to reckon the number of calves a cow has had by counting the rings on her horns (one calf to each ring), and from this to estimate her age. Prof. Albrecht, of Königsberg,

has made an investigation to ascertain whether this method of reckoning is reliable. He found that the number of horn-rings agreed with the number of calves born in 52.8 per cent, of the cows examined, and that, if a difference of one between the rings and calves was not regarded, the percentage of agreements rose to 91 per cent. The divergencies were greater in the case of estimating the cow's age from the horn-rings; and this is easily comprehensible, for not every cow produces a calf every year, and all cows do not calve for the first time at the same age. The estimation of the age by the horn-rings is therefore not absolutely reliable. Further, it is well-known that the horn-rings are caused by inequalities in the growth of the horn; and other factors besides pregnancy may influence the growth of horn.—(*Berliner Tier. Woch.*)

TUMOURS OF THE SUPRA-RENAL CAPSULES IN CATTLE AND THEIR EFFECT UPON THE CHARACTER OF MEAT.

Ballon has published the following note (*Rec. de Méd. Vét.*). In the abattoir at Troyez, he observed two cases of tumours of the bovine supra-renal capsule, which are of special interest from the fact that the flesh of the cattle was spoilt by reason of its manifestly sanguinolent character.

The first case was a cow coming from the market at Villette. Post-mortem, an enormous tumour, probably of cancerous nature, was found upon the right supra-renal capsule. The flesh had a bad aspect, and resembled the flesh of a badly bled-out animal. The muscles had a dark red colour; when cut, their sectional surfaces discharged an abundant fluid serosity, strongly tinged with red.

The second case was a cow ten years old, and the tumour was upon the right supra-renal capsule. It weighed $2\frac{1}{2}$ kilogrammes (= about $5\frac{1}{2}$ lb.) and had caused the complete atrophy of the corresponding kidney. In this case, also, the flesh had the same bad aspect as in the preceding case.

The author considers the question whether the sanguinolent character of the flesh was the consequence of the insufficient functional activity of the supra-renal capsule, and answers it in the affirmative. His view is that the lack of regular function of the capsule manifested itself in two modes. Firstly, by a diminution of antitoxic power upon the toxins of muscular origin, giving the flesh the aspect of that of an over-driven animal. Secondly, by a diminution in the production of adrenalin, causing considerable disturbances of the circulation, which were manifested by repletion of the capillaries and extravasations of blood.—(*La Clinica Veterinaria.*)

[Nothing is said regarding the condition of the animals before slaughter.—*Transl.*]

W. R. C.

Dr. W. H. Dalrymple, M.A.C.V.S., of Baton, Rouge, La., has been the recipient of a fellowship in the American Medical Association. It is a worthy honour worthily bestowed. Recognition of veterinary merit is welcome in forging a stronger bond of union between the two professions. Our congratulations are extended to Dr. Dalrymple and the American Medical Association as well.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

[NATIONAL V.M.A.—NORTHERN BRANCH.]

The Quarterly Meeting was held at the Grand Hotel, Birmingham, on Wednesday, November 24th, Mr. J. Malcolm (President) occupied the chair, and there were also present: Messrs. W. H. Brooke, J. J. Burchnall, T. Chambers, J. L. Cormack, B. DeVine, A. B. Forsyth, F. L. Gooch, H. B. Hiles, W. E. Ison, J. Martin, H. L. Pemberton, H. S. Reynolds, — Stevens, F. B. O. Taylor, W. White, H. Yeomans, J. Young, and the Hon. Sec. Mr. H. J. Dawes.

Apologies for unavoidable absence were announced from the following: Prof. Mettam, Messrs. L. Heelis, T. Hobson, G. Thornton, T. J. Brain, D. Forwell, R. L. Phillips, J. Carless, A. Over, W. Grasby, W. Gascoigne, E. O'Neill, R. C. Trigger, W. Trigger, and others.

The minutes of the previous meeting were read and confirmed.

COUNCIL'S REPORT.

The HON. SEC. presented the following report of the Council, presided over by Mr. Malcolm:

Recommended that the subject for discussion at the next meeting be "Interesting Cases," each member of the Council present undertaking to bring forward at least one case.

Recommended that the appeal of the Anglo-Franco-Belgian Veterinary Relief Fund for a donation be acceded to, and that a sum not exceeding ten guineas be voted by the Association for that purpose. The Hon. Sec., in this connection, formally gave notice, in order to comply with the bye-laws, that he would move a resolution to that effect at next meeting.

Recommended that a letter of sympathy be sent to Mr. F. W. Barling, of Hereford, whose wife was lying seriously ill. (Since deceased).

The HON. TREASURER (Mr. Burchnall) reported that certain members were in arrear with their subscriptions to the Association, and it was recommended that, subject to the Hon. Sec. writing them a final letter, the bye-law excluding them from membership be put into operation at the end of the current year in the case of the three worst offenders.

On the motion of Mr. Gooch, seconded by Mr. Reynolds, the report was adopted, and a special resolution confirming the exclusion of members seriously in arrear, as recommended by the Council, was carried unanimously, on the motion of the President, seconded by the Hon. Sec.

THE LATE PROFESSOR MCCALL.

The HON. SEC. said that since the last meeting of the Association they had lost one of their oldest honorary associates in Prof. McCall, whose untimely death was a serious blow to the profession. Professor McCall was one of the finest examples of a veterinary surgeon, being both a practical and a scientific man, and not only was he a most successful tutor, but he had a wonderful hold upon his pupils, who had the greatest veneration for him. He moved that a vote of condolence be forwarded to Mrs. McCall and the family in their bereavement.

The PRESIDENT, in seconding, said he was at one time in the closest contact with the late Prof. McCall, who was President of the National Association while he (the speaker) was Secretary. He remembered, too, with pleasure, that during his former presidency of the Midland Association, something like twenty-five years ago, Prof. McCall came down and gave them a most interesting paper. He was a man whose death had created a void in their ranks which would not readily be filled.

The resolution was carried *sub silentio*.

Annual Banquet. The Hon. SEC. asked the meeting for an expression of opinion as to the propriety of holding the customary banquet at the annual meeting, which would be held next quarter. It had been represented to him that it would be unseemly, and that, too, was his own view of the matter.

After some general remarks, it was moved by Mr. REYNOLDS, seconded by Mr. BURCHNALL, and carried unanimously, that the annual banquet be dispensed with during the continuation of the war.

SOME SPECIAL INSTRUMENTS.

Several members produced various special instruments, which were examined with much interest, leading afterwards to a short discussion.

Mr. GOOCH said: Those members present at the last meeting would remember how reluctantly he came to the aid of the Secretary in this matter, because he felt a difficulty in bringing anything forward that would be of general interest. He wished to emphasise the fact that he was showing nothing new, and his object was to create a discussion that would enable them to pick up fresh wrinkles from one another. With one or two exceptions the whole of the instruments which he was showing them had been made in his father's shop. Some of them had been patented, but anyone could copy them, and he would not object to the patent being infringed by a friend. He did not suppose they were patents out of which a man could make much in the way of royalties, and certainly his experience in that direction would hardly justify him renewing the patents. So long as any little improvement benefited a brother practitioner he should be only too pleased to give him the benefit of it, patent or no patent. One thing he could not too deeply impress on the members, and that was the need for keeping the instruments scrupulously clean. Quite apart from septic dangers, the appearance of the instruments often made a great impression on one's client. Clean instruments and dirty instruments, whatever the result of the operation, might make or mar the reputation of the operator, especially of a young practitioner. He also made a point of keeping his instruments properly grouped by themselves—the obstetric instruments, the castrating instruments, the dental instruments, and so on. According to the class of case he was attending, he took the instruments which had been kept together, and then there was less danger of getting to one's destination and finding one had left the most important instrument behind. He found it most convenient to have a separate box for each class of instruments.

Mr. GOOCH then explained his instruments in detail, the following being among the instruments which he exhibited:—Tooth Shears (improvement on Thompson's), Tooth Forceps, with fixed fulcrum, Firing iron (double), Iron for removing warts, Embryotome and Embryotomy hooks, Tourniquet, Dog Muzzle, Covered lance (adjustable), Suturing Instrument for large flesh wounds, Embryotomy knife, Twitch, Electric lamp for throat operations, Pill deliverer.

Mr. GOOCH, in conclusion, said that if any of his friends would like to borrow an instrument that was not in daily use at any time, he should be only too pleased to lend. He made only one condition—that the borrower paid the carriage both ways, and keep clean. He hoped his friends would not be afraid to ask him, because it would be a pleasure to him to feel that his instruments, of which he was exceedingly proud, were appreciated by his brother practitioners.

Mr. YOUNG brought for inspection:—Improved Blakeway's tooth shears, Double-cutting tooth rasp with interchangeable plates, Assortment of aluminium and nickel tracheotomy tubes, V shaped instrument for docking young puppies, Perfect pair of canine tooth forceps, Leg strap for controlling vicious horses.

He also showed something new in the shape of a Mouth-gag for dental operation, which fits in between the molar teeth, and keeps the mouth perfectly open, at the same time leaving more room for hand work, without risk of injury to the mucous membrane.

Mr. TAYLOR showed an instrument for fixing the trachea when giving intratracheal injections, etc.

Mr. MARTIN said he was much interested in the instruments, which combined neatness with utility. He did not now cast horses when firing them, but instead used a special hobble, which he found very effective. He would like to say that he enjoyed meetings of this character very much, and he believed they did more good than some of those at which a scientific paper was read.

Mr. REYNOLDS endorsed what Mr. Gooch had said about the importance of keeping one's instruments clean, and cited a case within his own experience where a client gave up a doctor because he discovered his instruments were dirty. He had used Mr. Gooch's tooth shears and he could speak very highly of them. Parturition in the dog was often a source of trouble, and he used to be at a loss for something to aid in bringing away the foetus. He had invented a very simple contrivance, which he now produced. It was a long piece of wire with a hook at the end, the hook being bent in such a way as not to hurt the vagina when withdrawing it. He had also used it in pigs and sheep with successful results. Another thing which he produced for inspection, which was an object of much interest, was a milk fever outfit which could be sterilised.

Mr. FORSYTH and Mr. CHAMBERS both expressed the pleasure it had given them to see so many useful hints, some of which were new to them.

Mr. CORMACK said he was a practitioner who made all the use he could of his fingers, and consequently he did not keep a large stock of instruments. Among those he had seen that afternoon were some very useful ones. He had used himself an improvised arrangement of a similar sort to the instrument which Mr. Gooch had shown them for removing warts. In removing excessive growths from grease in horses, he had used two fireman's shovels, one that had been rasped up a little sharper than usual. He was glad that he had attended the meeting, as he had picked up much useful information.

Mr. DEVINE said it was one of the most instructive gatherings he had ever attended in connection with the Association. The tooth rasp which Mr. Gooch showed them was ingenious, but he wondered where he got the leverage when he had pulled the front molar. The parturition instruments, especially the knife and hook invented by Mr. Gooch's father, were new to him, and he should imagine they were very useful, but during the past ten years he had noticed that practitioners took a liking to certain instruments, and what suited one man did not necessarily suit another. He suggested an improvement in regard to one of the mouth gags that had been shown, by removing the thumbscrew at the back. He himself used a smaller gag on the same principle, and it was quite useful. He thought some of the dental instruments, he had seen that afternoon had handles too short, and in operating on some horses, one would have a difficulty in handling them.

Mr. BROOKE said he felt indebted to Mr. Gooch for showing him several new things in the way of instruments, but what had impressed him as much as anything was the mouth gag used by Mr. Young. He had tried it himself, and he must say that for most purposes it was the best gag he had used. He was interested in obstetrics in dogs, and he had experienced the greatest difficulty in extracting the foetus from the toy variety. He was therefore particularly interested in the hook which Mr. Reynolds had shown them. He had had cases where he could just touch the head with his finger,

and he had used a button hook as a possible means of getting it out by the palate, but it was a most trying operation, and not always successful. One trouble, as Mr. Reynolds suggested, was to withdraw the hook without injuring the membrane, and if Mr. Reynolds had overcome that difficulty he had done the profession a considerable service.

Mr. YEOMANS, who joined in the thanks to those who had brought instruments, said he thought the best forceps were Hobday's, but with toy bitches they were too large, and he had some made of a smaller size, but of the same pattern.

Mr. BURCHNALL said that one thing which struck him, when Mr. Gooch spoke of the desirability of keeping instruments clean, was that it is equally important to send out medicine in a tidy way. It was no more expense to a practitioner to send his medicine out neatly wrapped up, and it was calculated to make a big impression on a client. If medicine was sent out in a slovenly manner, a client might reasonably judge the veterinary surgeon by that standard.

The HON. SEC. said that, like the previous speakers, he would like to thank their friends who had entertained them that day with a display of useful, and in some cases novel instruments. Mr. Gooch and Mr. Young had a reputation in the profession for their instruments, and it was very good of them to share their knowledge in this way with their fellow members. He was very much interested in the instrument which Mr. Taylor had brought, because he (the speaker) had also found a difficulty sometimes in inserting the needle into the trachea of the smaller animals. So far as he could see, Mr. Taylor's ingenious instrument removed that difficulty.

Mr. Martin told them in a very casual way about his hobbles. It was only Mr. Martin's modesty that prevented him telling them more about them. The hobbles which Mr. Martin used were the best he had seen, and for firing horses, or suturing wounds, or anything of that sort they were invaluable. He was only sorry that Mr. Martin had not brought them with him to let them see what they were.

The PRESIDENT said he was delighted at the turn the discussion had taken, because it showed that the subject had been one of general interest. Personally, he had very little to do with instruments, as he had few surgical cases, but he could understand the value of many of the things that had been exhibited that day. He proposed a very hearty vote of thanks to those gentlemen who had brought instruments to the meeting for their inspection.

This was seconded by the Hon. Sec. and carried unanimously.

Mr. GOOCH, in acknowledgment, said if he had learnt anything by experience he was only too pleased to communicate it to his friends. He answered some of the criticisms and questions that had been put, and in conclusion, showed a piece of stake, about an inch thick and a foot long, which was recovered after death from a horse. The animal had a bad wound which would not heal, and the owner would not permit an operation.

A TUBERCULOUS SPLEEN.

Mr. TAYLOR produced an interesting specimen of a tuberculous spleen. It was taken from a seven-year-old Shire brood mare which had had four or five foals, and about a fortnight after her last foal she began to waste gradually. The owner would not have her tested, and after death the spleen was found to be badly affected with tuberculosis, and also the lymphatic glands and other adjacent parts.

At the conclusion of the meeting, the members had tea together.

H. J. DAWES, F.R.C.V.S., Hon. Sec.

SOUTHERN COUNTIES VETERINARY MEDICAL SOCIETY.

[NATIONAL V.M.A. SOUTHERN BRANCH.]

The December meeting, which is usually held in London during the Cattle Show week, was this year held on Thursday, the 2nd inst., at the Royal College of Veterinary Surgeons, Red Lion Square, in order to enable members who could remain to take part in the meeting of the Central Society, which was held at the same place later in the evening. The President, Mr. G. H. Livesey, of Hove, was in the chair, and the others who signed the attendance book were Messrs. A. H. Archer, H. A. MacCormack and F. G. Samson.

On the proposition of Mr. MacCormack, seconded by Mr. Samson, the minutes of the last meeting as published in *The Veterinary Record* were taken as read, and confirmed.

The Hon. Secretary, Mr. A. H. Archer, announced apologies for inability to attend from Messrs. W. Burt, W. Caudwell, W. A. Dellagana, Captain Leeny, Messrs. J. C. Munby, C. Pack, H. Redford, C. Roberts, P. Perkins, C. H. Spurgeon, A. C. Wild, and F. T. Walder, and added that Mr. Caudwell also asked them to accept his resignation.

Mr. SAMSON suggested, with reference to the latter, that their Secretary should write from the meeting to Mr. Caudwell and ask him to re-consider his resignation.

The HON. SECRETARY reported that he had an intimation from the Anglo-Franco-Belgian Relief Fund, saying he had been placed on the Committee. He accordingly attended a meeting in that building, when he was asked to bring the matter to the notice of the members of their Society, and suggest that possibly they might see their way to give a subscription from the Society towards the Fund that was being raised in this country. As far as he could understand the donations could be in either money or kind, and the assistance was intended to help the French and Belgian Veterinary Surgeons to re-start their practices after the War, or when their country became again in such a state that they could do so.

The PRESIDENT: I don't see how we can deal with it to-day. I think it will be better to defer it to the next meeting, when perhaps our Hon. Treasurer will be able to be present; probably it will then be further adjourned till things begin to settle down.

Mr. ARCHER: I believe they have had a few individual donations.

Mr. MACCORMACK: Yes, about £80 I think.

It was decided to hold the next meeting of the Society, which will be the annual one, in London, towards the end of March.

The HON. SECRETARY said they would probably remember that he was appointed delegate to the Sanitary Institute Congress which was to have been held at Cheltenham, but instead of the usual Congress they had a two days meeting at Brighton, and in the circumstances he did not think the matter was of sufficient importance for him to attend.

The PRESIDENT reminded the meeting that last year they decided to send a Christmas greeting to all of their members who were on active service, but he questioned whether it was advisable to do the same this year, in view of the uncertainty as to who was now serving and where they all were at the present time. They could give them their good wishes all the same.

Mr. ARCHER agreed, adding that it would be very difficult to get cards to the members if they decided to send them.

RINGWORM IN ARMY HORSES.

Under the heading of general business, Mr. Archer raised the question of ringworm in Army horses, about

the cure of which he said there was considerable diversity of opinion at the present time. To his mind, this diversity of opinion was due to the cure of ringworm being confused with the eradication of the disease, whereas the two were absolutely distinct. It was easy enough to cure ringworm, but to successfully eradicate it was quite another matter. They could cure it in a fortnight, but they could not eradicate it in six months. The spores of the fungus which constituted ringworm had such a tenacious vitality that there was really no dressing that could be applied to the horse's whole body that would destroy them. He had to inspect every animal that came into the remount depot with which he was associated, and they would be surprised at the number that were suffering from ringworm more or less.

An interesting discussion followed, in the course of which Mr. Archer mentioned some of the dressings which he had found most efficacious.

A. H. ARCHER, Hon. Sec.

SOUTH DURHAM AND NORTH YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

[NATIONAL V.M.A. NORTHERN BRANCH].

A meeting was held at the Imperial Hotel, Darlington, on Friday, December 3rd, Mr. J. M. Walker, West Hartlepool, President, in the chair. There were also present: Messrs. R. Barker, Yarmouth; T. Wilkinson, Lanchester; A. C. Forbes, Bishop Auckland; Lieut. J. H. Taylor, A.V.C., and F. H. Sanderson, Darlington.

It was proposed by Mr. Forbes, seconded by Mr. Wilkinson, and carried that the minutes of the previous meeting, as they had appeared in *The Veterinary Record*, be taken as read, and confirmed.

Election of Auditors. Mr. DOBBING and Mr. FORBES were elected Auditors, on the proposition of the President, seconded by Mr. Wilkinson.

Correspondence. Apologies regretting their inability to be present were received from Messrs. P. Snaith, G. R. Dudgeon and E. R. Gibson.

After reading a letter from Mr. C. G. Hill, in answer to the Secretary's letter asking him to re-consider his resignation, brought up at the last meeting,

Mr. FORBES proposed, and it was seconded by Mr. Wilkinson, and carried, that Mr. Hill's resignation be accepted with regret.

Proposed by Mr. FORBES, and it was seconded by the President, that the remainder of the correspondence lie on the table.

New Member Mr. T. HARPER, M.R.C.V.S., North Shields, was nominated by the Secretary, and was seconded by Mr. A. C. Forbes.

The Treasurer submitted the annual financial report of the Association, which was considered satisfactory.

The PRESIDENT proposed and Mr. Forbes seconded, and it was carried, that the report be adopted and the accounts paid.

OPEN SHOULDER JOINT.

The Secretary reported a case of an open shoulder joint which he treated last year to show what time elapsed from succeeding in stopping the synovial discharge and the return to soundness.

The subject was a four-year-old 17 h.h. Clydesdale mare. He was called in to see her on June 12th, 1914; she had been found very lame on her off fore leg.

A glance at the off shoulder point showed a circumscribed swelling the size of an orange, clearly visible, which, after careful examination, revealed a slight breach in the skin at its most proximate point. He applied a blister and racked her up, so as to prevent her

lying down. She was kept racked up until the 21st inst. when she was found to be sound again, the swelling of the shoulder joint having subsided and looking quite natural again.

She was now turned out, but on the 23rd inst. was found to be very lame, as before, with the shoulder joint now very much swollen. He could find no breach of skin now, so applied a charge of Antiphlogistine.

June 27th synovia began to discharge, so placed her in slings, injected 2 c.c. of polyvalent serum, and to check the synovia had applied, as often as possible, to the edges of wound a solution of Hyd. perchlor. in glycerine, followed by Tannic acid.

July 2nd the synovial discharge appeared in no way checked—in fact it was now most profuse, so commenced along with the above treatment the continuous application of ice bags to the shoulder. After five days of this treatment the synovial discharge ceased.

July 21st mare was taken out of the slings but was still very lame.

Aug. 9th. Blistered shoulder and turned mare out to grass. Still very lame.

Sept. 12th. Re-blistered shoulder: lameness improved.

Nov. 9th. Re-blistered shoulder: mare walking fairly sound but trotting lame: lameness analogous to check ligament lameness.

Mar. 5th. Brought in sound, and has worked sound ever since. Shoulder fully regained its natural condition.

What struck me as peculiar in this mare's lameness was that she always took a decided longer stride with her lame leg when walking, and always inclined to put down her heel first—which is rather contrary to other shoulder affections.

Mr. FORBES said he generally applied an aqueous solution of Hyd. perchlor. to the wounds with the continuous application of cold water.

Mr. BARKER said that he also used a solution of Hyd. perchlor. in open joints.

THE EFFICACY OF VACCINES AND SERUMS IN THE PREVENTION AND TREATMENT OF INFLUENZA, STRANGLES, POLL-EVIL, ETC.

The Secretary said he had asked for a discussion of the above because he thought the time was coming when serums would occupy the most prominent shelves in the surgery for the treatment of diseases. He himself had been using serums extensively for the last two-and-a-half years in the treatment of Influenza, Strangles, Poll Evil, etc.

In Influenza he had used the Streptococcus serum as a curative, and had found it highly beneficial, especially in those cases with suppurating glands of the throat and sub-maxilla.

As a preventive, he does not think he has used it extensively enough to give an opinion of its efficacy, but he can say that where he has had an outbreak of influenza in a stable he has injected those horses prone to the infection, with the result, that if those horses injected fell a prey to the infection, the disease has generally run a much milder course.

In strangles he would not like to be without Streptococcus serum, especially in cases of bastard strangles. In poll evil, fistulous withers, and other suppurative conditions, he has found the polyvalent serum beneficial.

The PRESIDENT said that he also had been using the polyvalent serum in the treatment of poll evil, etc., and found that it had acted as a curative. He generally curetted the parts along with injecting the serum.

Lieut. J. H. Taylor, A.V.C., now joined the company, to the high delight of the members present; he being home a few days on leave. Lieut. Taylor gave a few very interesting accounts of his travels and doings, which fully absorbed the attention of the meeting.

The SECRETARY proposed that, owing to so many members being away on active service, the meetings of this Association be postponed until the termination of the war, which was seconded by the President, and carried.

The members present then had tea together in the hotel.

FRED. H. SANDERSON, Hon. Sec.

The Supply of Army Horses.

From the evidence furnished in various recent letters from the War Office to the Board, the Committee draw the conclusion that the present position is a "menace to the State."

"So long as racing and hunting continue unchecked, there is no reason to anticipate any very large reduction in the number of horses of the highest quality, but except in Ireland and at Newmarket, racing is entirely stopped, and hunting, although not suspended, is conducted under unusual difficulties. If the present condition of things continues for any length of time the horse-breeding industry must be disastrously affected, as the breeding of thoroughbred horses would be immensely diminished, and we should be in danger of losing the sires on which we depend, not only for military purposes, but for the civil supply of the country."

One or two extracts from the correspondence referred to may be quoted. On July 9 last the War Office wrote:—

"Unhappily the experience of the recent mobilisation has proved that though this country produces many super-excellent horses, the number of unsound and utterly worthless animals, which ought never to have bred, is deplorably large."

And ten days later Earl Kitchener wrote to the Earl of Selborne:—

"I have no hesitation in saying that from a military point of view it is of the utmost importance to ensure an ample supply of light draught and riding horses of a really good stamp, suitable for cavalry and artillery work, if this country is, in the future, to be fully prepared for war. . . . Even the numbers available have not been sufficient for our largely increased wants, and consequently we have had to purchase heavily in America, some £12,000,000 having been spent there since war was declared. Some, at any rate, of this expenditure might have been saved had the home-breeding been on a proper footing."

The main difficulty, however, is quality, and to secure this the first requisite is a good supply of high-class thoroughbred sires readily available to the small breeder at a reasonable price, together with a corresponding number of good brood mares, capable not only of producing a good foal, but also of earning their keep on a farm. . . . I hope, therefore, that you will do your utmost to secure the approval of the Treasury to the adoption of some scheme of State aid. The question is one of military importance, and it is essential that it should be dealt with on large and comprehensive lines, and at the earliest possible date."

Dealing with the present method of purchasing Army horses, the committee state:—

"It is not suggested that suitable horses will not be available and in sufficient numbers to meet all War Office requirements in times of peace. Hitherto the Army has been a comparatively small customer in the horse market of Great Britain—the normal purchases in the United Kingdom in times of peace amount approximately to only some 3,000 horses a year, and of these 80 per cent. are bought in Ireland. The fact that the

purchases are made chiefly through dealers and consist only of horses over the age of four, does not tend to bring the War Office into touch with the breeder, nor will any breeder in Great Britain attempt under existing conditions to breed horses, especially for remount purposes, as it would not pay him to do so.

If the Government want farmers and others to breed horses suitable for remount purposes they must in some way make it profitable to breeders to do so, and give further assistance and encouragement to the light horse breeding industry. The War Office should therefore purchase a much larger number of horses in peace time in England and Wales, as we consider that the number at present purchased is far too small to be an incentive to breeders to cater for the Army."

The Committee consider the encouragement of the breeding of horses suitable for artillery and light draught to be of the utmost national importance, a larger quantity of these being required on mobilisation than of the riding type.

"This type of horse has always been hard to find, but of late years, owing to the replacement of all omnibus horses and many vanners by motors, it is rapidly becoming extinct. But on light land and in the hilly districts small active draught horses are still to be found, and steps should be taken to encourage the improvement of that type. We understand that the use of the Shire horse during the present war has proved that he is on the whole unsuitable for campaigning, and can never, therefore, take the place of the smaller and hardier horse."

Expressing their entire concurrence with a statement made by the War Office in April, 1914, to the effect that "without an adequate supply of suitable horses in civil life upon which to draw it would be impossible to mobilise the Army as it is now constituted," the Committee conclude:—

"Unfortunately this supply did prove on mobilisation to be inadequate, and it appears to us, therefore, to be essential to the national welfare that steps should be taken by the Government to deal with the situation, and on comprehensive lines. We are aware that the adoption of our proposals will involve very considerable expenditure, but even if it eventually approximates an annual outlay of £100,000, the amount would be small compared with that expended by many Continental Powers, or with the sum that would be required if it were found necessary for the War Office to set up establishments for breeding remounts. We fully recognise the need for national economy, but in view of the serious condition of the light horse-breeding industry we are of opinion that it would be false economy to defer taking action on the lines suggested."

Commenting on this subject, "Hotspur," in *The Daily Telegraph*, says:—

"It is doubtful whether the Board of Agriculture would have chosen the present moment, if ever, to discuss a scheme of State horse-breeding with a view to its adoption. We know they give several thousands of pounds every year to encourage light horse-breeding, the granting of King's Premiums and Board Premiums to stallions exhibited at Islington being evidence of the fact. But ownership of such places as Tully and Russley takes them further than that, and formally commits them to the rôle of actual breeders. Those who for years have felt strongly that the State-aid to horse-breeding has been totally inadequate, and that too much dependence has been placed on private effort will rejoice that the Government has been forced into its new position by the mere fact of the impossibility, on the whole, of turning down Colonel Hall Walker's offer."

As they stand, Tully and Russley may admittedly represent the nucleus of an admirable scheme, but I am not wrong in saying that any scheme, to meet with a substantial measure of support from the Government's advisers will have a broader basis.

"There may be no shortage of horses for war purposes at the moment. Many thousands are in the great remount parks behind the lines in France, and Australia has sent many thousands to Egypt, so that the Director of Remounts may be said to have organised against all emergencies, now and in the near future. But what of the time to come? The tens of thousands—one may say hundreds of thousands—of horses collected from all parts of the world, at an enormous cost, must come to an end of their short years of usefulness. Then what?"

I do not think there is any chance of the Government taking up the breeding of thoroughbreds on the highest lines, as Colonel Hall Walker did at Tully. The German Government has for years done so at its Royal Graditz Stud, which the late Count Lehndorff ably controlled, and it is only twelve years since they bought our Derby winner, Ard Patrick, for £21,000, in order that the quality of the stock might be improved. The chief prizes of the German Turf for years fell to the Royal Graditz Stud, and it is still first and foremost in the enemy country as an institution for the improvement of the light horse generally, but especially for remount purposes in the army.

PARLIAMENTARY.

In the House of Commons on Thursday, Nov. 9th.

COLONEL HALL WALKER'S GIFT.

Sir F. Cawley (R., Prestwich), who was received with sympathetic cheers, asked whether the Government had accepted the offer of Colonel Hall Walker to give them his breeding stud of thoroughbred horses, and in what way they considered the nation would benefit by becoming the owners of his stud.

Mr. Acland: The Army Council had made urgent representations to the Board of Agriculture, based on its war experience to the effect that the stock of horses in the United Kingdom suitable for military purposes had become dangerously depleted. An adequate supply of half-bred horses of the type and quality required must be founded on thorough-bred stock, and in the opinion of the War Office and the Board of Agriculture the acceptance of the hon. member's generous offer will provide a greatly needed stimulus to the light horse breeding industry, and a valuable source of supply to the class of stallion required for the production of military horses. (Cheers.)

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Dec. 9.

REGULAR FORCES. ARMY VETERINARY CORPS.

Christian names of temp. Capt. Frank Septimus Clay are as now described.

Dec. 10.

Temp. Lieut. to be temp. Capt.:—J. B. Welham (Dec. 1).
Temp. Lieut. W. A. M. Kilpatrick relinquishes his com. (Dec. 2).

Dec. 11.

To be temp. Lieuts.:—J. F. O'Grady (Nov. 29); A. W. Allen (Dec. 1).

Dec. 13.

Temp. Lieut. to be temp. Capt.:—L. Mitchell (Dec. 2).

Dec. 14.

Majors to be Lt.-Cols.:—F. D. Hunt and W. F. Shore, both superny. to estab.; F. W. Hunt, c.m.g.
To be temp. Capt.:—F. Lindsay (Dec. 1); temp. Lieut. F. W. Medlock (Dec. 2).

Dec. 15.

To be temp. Lieuts.:—R. W. Glaister, W. B. Towell, R. P. Holmes, C. W. Perrin (Dec. 6).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Dec. 9.

To be temp. Major:—Major G. C. O. Fowler, ret. pay (Nov. 28).

To be temp. Lt.-Col.:—Major G. C. O. Fowler (Nov. 28).

Dec. 10.

Maj. (temp. Lt.-Col.) A. England relinquishes temp. rank on alteration in posting (Nov. 17).

Major (temp. Lt.-Col.) E. J. Lawson relinquishes temp. rank on alteration in posting (Nov. 27).

Dec. 11.

Capt. R. D. Williams takes rank and precedence as Capt. in the Army Vet. Corps, T.F., as if his appointment bore date Oct. 29.

The following casualty in the Expeditionary Force is reported:—

WOUNDED—Pte. E. Penfold, S.E. 8463.

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donation is reported:—

Mr. Sidney Villar, Amersham	£3 0 0
Previously reported	66 16 0

Total £69 16 0

Personal.

KEEN—SEWELL. On Dec. 11, at St. Peter's Church, Cranley Gardens, by the Rev. C. A. Compton, Ernest Beresford, Captain, R.A.M.C. (T.), attached to the 1/13th Princess Louise, Kensington Batt., London Regiment, of 128 Fulham Road, South Kensington, the only son of Dr. and Mrs. William Keen, of 35 Carlyle Square, Chelsea, to Eva Marjorie, the elder daughter of Mr. Edward Sewell, M.R.C.V.S., F.R.G.S., of 139 Coleherne Court, S.W.

OBITUARY

JAMES ATCHERLEY, M.R.C.V.S., Harrogate.

Graduated, Lond.: Dec., 1854.

Mr. Atcherley died on Dec. 10th, aged 82.

JAMES WATSON, Jr., M.R.C.V.S., Boyle, Co. Roscommon.

Edin.: Dec., 1897.

Death occurred on October 11th, aged 39.

The A.V.C. Comforts Fund.

List of Contributions received to Dec. 8th:—

	£	s.	d.
From share of profits, Matinee, Nov. 16th	75	5	6
Major H. G. Allen, A.V.C., India	2	0	0
Mrs. Walker, Alton	15	0	
Mrs. Porrett, Colchester	10	0	
Mr. George W. Foote, Guernsey	2	0	0
Mrs. Victor Leckie	2	2	0
Mr. and Mrs. Campey, Woolwich	2	0	0
per Miss Queripel:—			
Mr. C. H. Spurgeon, Petworth	1	1	0
Mr. W. S. King, Burdett Rd., E.	3	3	0
Mr. F. Airey, Biggleswade	2	2	0

Mr. A. Crofts, Bedford	£1	0	0
Mr. Trevor Spencer, Kettering	2	2	0
Mr. S. W. Jones, Luton		10	6
Mr. G. H. Pickwell, Canterbury	2	2	0
Mr. H. J. Parkin, East Ham	1	1	0
Mr. C. H. Sheather, Redhill	1	0	0
Mr. J. E. Miller, Harwich	1	1	0
Mr. H. Lepper, Aylesbury	1	1	0
Mrs. MacArthur, Leighton Buzzard	2	2	0
	18	5	6
per Mr. King, 264 Burdett Road, Limehouse, E. :—	111	8	0
		129	13 6
Messrs. Willows, Francis & Co., Ltd.	5	0	0
Mr. F. V. Smythe	1	0	0
Mr. W. Izard	10	0	0
Messrs. P. & E. Abbott	10	0	0
Mr. R. S. Bradshaw	1	1	0
Messrs. Sanders Bros.	1	1	0
Mr. H. Green	1	1	0
Mr. P. Aarons	10	6	
Messrs. M. Abbott & Co.	1	0	0
Messrs. Hatfield & Son	10	6	
Mr. A. S. Morfey	10	6	
Mr. G. J. Anderson	1	1	0
Messrs. Harvey & Willis	10	6	
Mr. R. K. Bevington	1	1	0
Mr. C. Calvan	10	0	0
Mr. W. J. Sims	10	0	0
Mr. G. Fox	10	6	
Mr. R. W. Jones	10	6	
Mr. W. Meadmore	10	6	
Mr. H. H. Worrow (M), Shadwell	1	1	0
Mr. J. Wiseman	1	1	0
Mr. S. Hitchman	10	6	
Mr. W. R. Clarke	1	1	0
Mr. A. Lamery	10	6	
Messrs. E. R. Alcock & Sons	10	6	
Mr. A. Braudram	1	1	0
Mr. W. Worringham	10	6	
Mr. A. Horn	1	1	0
Mr. J. J. Prior	1	1	0
Mr. J. Frazer	10	0	0
Mr. F. Leech	2	2	0
Mr. A. Williams	1	1	0
Mr. J. W. Arnett	10	0	0
Mr. H. L. Raphael	10	6	
Mr. S. Fortescue	1	1	0
Mr. G. W. Abbott	1	1	0
Mr. B. S. Cockerton (M), Cam. bridge Heath	1	1	0
Mr. C. E. Wells (M), Whitechapel	2	2	0
Sir E. Mann, Bart.	1	1	0
Mr. S. Ensum	1	1	0
Mr. C. Webster	1	1	0
Mr. A. L. Alexander	10	6	
Mr. P. Savill	1	1	0
Mr. J. E. Newell	10	0	0
Mr. T. Feast	1	1	0
Mr. J. Welch	1	1	0
Mr. W. F. Shaw (F), London, N.	1	1	0
Mr. W. Grey (M), Ilford	1	1	0
Mr. R. Ling	10	6	
Mr. S. F. Gardner	10	0	0
Mr. H. Fardell	1	1	0
Mr. Wm. Wells	1	1	0
Mr. C. Davis	10	6	
Mr. P. Gilling	10	0	0
Messrs. Bovill	1	1	0
Mr. F. S. Lamboll	1	1	0
Mr. W. Cawthorn (M), Harlesden	1	1	0
Mr. W. Willis (M), Clapham	1	1	0

Mr. J. W. McIntosh (F), Myatt's Park	10	0	0
Mrs. C. Larkins	10	6	
Mr. C. Larkins	1	1	0
Mr. Percy Howard (F), Wanstead	2	2	0
Mr. J. W. Baxter (M), London, S.W.	1	1	0
Mr. T. C. Garry (F), Wandsworth	1	1	0
Mr. A. H. Farrow (M), London, E.	1	0	0
Mr. R. N. Stollery	5	5	0
Messrs. Corbyn, Stacey & Co.	1	1	0
Messrs. John Knight	1	1	0
Mr. J. W. Wyles	10	6	
Mr. J. Roll	10	0	0
Mr. A. H. Towne (M), London, N.	1	1	0
Mr. D. Frost	10	6	
Mr. G. Wallis	10	6	
Mr. L. Grypsperdt (M), Croydon	1	0	0
Mr. A. H. Barker	10	6	
Mr. F. MacDonald (M), London	10	0	0
Mr. G. Delaney (M), Co. Mayo	10	0	0
Mr. T. C. Dickinson (M) London	10	6	
Mr. S. E. Holmans (M), Lee, Kent	2	2	0
Mr. E. Little (M)	1	1	0
Mr. R. P. Watson	1	1	0
Mr. Alfred Knifton	1	1	0
Mr. Herbert Savill	1	1	0
Mr. F. B. Savill	1	0	0
Mr. W. D. Vincent	1	1	0
Mr. H. Savill	1	0	0
Mr. W. Donaldson	1	1	0
Mr. C. E. Harwood (M), London	1	1	0
Messrs. Barrett & Whitlamsmith, (M), Lewisham	2	2	0
Messrs. Gingell, Son & Foskett, Ltd.	1	1	0
Mr. E. Alfred West (F), S. Kensington	3	3	0
Mr. A. E. Gostling (M), South Hampstead	1	1	0
Mr. H. A. Block, Solicitor	1	1	0
Mr. A. Broad (M), Finchley Rd.	10	6	
Mr. A. S. H. Skelton (M), Leyton	1	1	0
Mr. C. Yates	10	6	
Mr. E. J. Fowler (M), London	1	1	0
Mr. J. W. Robinson	1	1	0
Mr. H. D. Jones (M), Peckham	10	6	
Mr. W. T. Paulin	1	1	0
Mr. T. Skilton (M), Epsom	1	1	0
Mr. R. S. Bradshaw, 2nd don.	1	1	0
Mr. J. Bradshaw	1	1	0
Mr. Ed. Rasleigh	1	1	0
Mr. T. W. Thorpe	1	1	0
Mr. G. H. Livesey (M), Hove	1	0	0
Mr. N. Almond (F), Kingston-on-Thames	10	6	
Mr. F. W. Chamberlain (M), Wimbledon	10	6	
Mr. W. Perryman (M), Lambeth	1	1	0
Mr. A. E. Sangster (M), Hampst'd	1	1	0
Mr. J. Nolans (M), Birr	1	1	0
Mr. P. Abbott	10	0	0

Parcels of warm clothing received from :—

Mrs. Phillips, Ipswich; Mr. T. C. Toope, Dover; Mr. S. H. Slocock, Hounslow; Mr. A. A. Higgins, Hounslow; Mr. R. A. Philp, Brentwood; Mrs. and the Misses Woolston, Bedford; Mr. T. Powell, Fenny Stratford; Mr. W. Hill, Dunstable; Mrs. Grasby, Daventry; Mrs. Golding, Eastbourne; Mr. W. W. Golding, Hertford; Mr. W. J. Whitecross, Kingston-on-Thames; Mrs. G. Evans (through Mr. King); Mrs. Macey, 91 Belgrave Road, S.W.; Mrs. Powell, Newton Longville, Bletchley; Mrs. Wylie, Grays.

"Working" the Calf Slaughter Order.

The Inspector of Nuisances for Reading, reporting to the Corporation, makes the following observations on the working of the Maintenance of Live Stock Order, 1915:—

"The price laid down in the (Calf Slaughter) Order of 30s. or less as representing the price for which calves for slaughter can be branded is open to many misapprehensions and cases of hardship. I have on many occasions seen calves come into the public abattoirs for slaughter that were obviously worth £3 or £4, and I am informed that the calves have originally been bought for this sum and put into the public auction with the distinct understanding amongst the butchers themselves that no offer higher than 30s. (made by the owner) is made. By this means he is able to get the animal branded for slaughter.

"2. The question of branding is not altogether satisfactory, as the way it is being done now leaves one in doubt a few hours after branding to say if the animal bears the brand or not. Several cases I have come across had no resemblance to a broad arrow brand, but simply a splash of tar that might have been put on by any unauthorised person. In other cases no broad arrows at all were discernible, but they have—so the butcher states—got rubbed off in transit! I have spoken to some of the local auctioneers on the matter, and they have promised improvements in the branding, but I think official representations should be made to them.

"3. The main cases of hardship come from the private

dealer, for, as the Order stands now, if the butcher buys one or more calves he has to wait till the first public auction takes place for him to put the animals in and and buy them out again, simply to get the brand on. As you see, this entails a great waste of time, saying nothing of the commission fees the butcher has to pay.

"4. The question of how long the brand mark holds good is also causing a great deal of discussion. A calf taken to the public auction and bought in for 30s. can be branded and fed until it becomes two or three months old and then be slaughtered; but another identical calf that had not been taken to the public auction and gone through the same routine has to be left till it is six months old.

"5. The question of half-bred cattle from the exempted classes is also a matter of much comment and discussion. There appear so many ways that an Order can be evaded, and so many cases of hardship to the dealer, that I would suggest that representations to the Board of Agriculture be made on the whole subject."

The Town Clerk is to forward a copy of the report to the Board of Agriculture.—*Live Stock Journal*.

A Queensland correspondent states that the breeding of Angora goats, both for their hair and flesh, offers profitable occupation to those who go in for it in a business-like manner. In 1912 there were 6924 Angora goats in the State, which produced 6770 lb. of mohair; and 1388 were slaughtered for meat. Goat mutton is a good substitute for that of the sheep; it is difficult for the uninitiated to tell the difference.—*M. T. J.*

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended December 11	10	10	1	1			31	52	15	76	207
Corresponding week in											
{ 1914 ...	13	15			2	2	†	†	10	78	375
{ 1913 ...	12	13			2	44	44	78	5	74	602
{ 1912 ...	9	9			4	4	64	133	8	62	678
Total for 50 weeks, 1915 ...	556	623	56	692	48	85	||835	||1794	216	3852	16229
Corresponding period in											
{ 1914 ...	692	755	24	124	96	281	†1530	†2642	208	4221	38717
{ 1913 ...	560	614	1	23	150	339	2287	4479	197	2461	30560
{ 1912 ...	722	816	33	645	170	309	2748	5782	278	2843	38516

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked: —

Board of Agriculture and Fisheries, Dec. 14, 1915.

|| Figures for thirty-seven weeks only.

IRELAND.		Outbreaks		Outbreaks		Outbreaks		Outbreaks		Outbreaks	
Week ended Dec. 11		...	...	...	...	...	...	...	...	...	...
Corresponding Week in		...	...	...	...	...	...	...	...	...	...
{ 1914 ...		...	...	...	...	...	...	...	...	...	...
{ 1913 ...		...	...	...	...	...	...	...	...	...	...
{ 1912 ...		...	...	...	...	...	...	...	...	...	...
Total for 50 weeks, 1915		2	2	...	...	1	3	68	398	243	1349
Corresponding period in		...	...	...	...	...	...	...	...	...	...
{ 1914 ...		1	1	76	957	...	...	76	467	190	951
{ 1913 ...		...	...	...	...	1	1	112	511	132	876
{ 1912 ...		3	3	68	882	...	...	64	358	211	1678

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Dec. 18, 1915
 Note.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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MEETINGS OF SOCIETIES.

The South Durham and North Yorkshire V.M.A. has just decided to discontinue its meetings until the war is over. Probably this Society had at least as good reason for the step as any other in England, and certainly it had better reason than most; for the war has affected veterinary conditions more seriously in its district than in most other parts of the country.

So long as meetings can be got together, they may well be held. Necessarily the attendances will be small; and it may often be impossible to provide a set paper for discussion. But whenever even three or four members of the same profession meet there is never lack of material for discussion. Often some subject of professional interest presents itself; always there is the everyday experience of those present to fall back upon; and a party of veterinary surgeons can always spend a profitable hour or two in discussing each other's difficult cases. Beyond this there is another benefit which should be emphasised—the maintenance of that intercourse between individual members which is essential to the solidarity of the profession. Our Societies do so much to bring and to keep us together that every effort should be made to keep them going. Their activities will inevitably be crippled while the war lasts, but they need not be suspended altogether.

THE PREVENTION OF CONTAGIOUS ABORTION.

The discussion of this subject by the Royal Counties V.M.A. at their recent meeting (p. 263) and especially the report by Mr. Verney upon which it was based, is worthy the attention of country practitioners. The report forms another link in the accumulating chain of evidence of the value of the Board of Agriculture's methods of immunisation against epizootic abortion. It would be premature to regard the question as settled. It is just possible that the well-known tendency of the disease to "wear itself out" may have had some influence upon the returns; but the controls do not suggest that such influence was at all great. What the Oxfordshire results, following upon those previously obtained in Cornwall, undoubtedly do suggest, is that it is now in our power to control epizootic abortion; but further field experimentation is necessary for certainty. This is already being commenced in Berkshire, and might well be undertaken in every seriously infected county.

When this field immunisation was commenced, it was largely experimental; but it seems now to be approaching the end of this stage. Practitioners can recommend their clients to take it up—not, it is true, with absolute certainty, but with the strongest hope that it will be successful.

ON THE ACETYLENE GAS TREATMENT IN RINGWORM, SARCOPTIC, SYMBIOTIC AND DERMATO-DECTIC MANGES.

Any veterinary officer who serves with a Brigade finds in a few days that the bane of his patience lies in his skin disease lines. Therefore, one immediately endeavours to find an effective treatment for skin diseases, which come under class 9 in the nomenclature of the A.V.C.

There seems to be some controversy as to the causative agent of Canadian ringworm, and I am surprised that any V.S. should argue that this disease is not caused by the *Tinea tonsurans*, also that the *Favus tinea* never plays any part in true Canadian ringworm. But when one comes to the treatment of this disease, then does the Veterinary profession differ greatly, and the War Office aptly describes the situation in a circular where it enumerates a fairly long list of drugs, and states, "... all have their faithful adherents, and would appear equally efficacious." Now, my experience of what may be described as the Classical drugs used in ringworm, is that the result of all of them can be described in the one word "tedious."

I find a very simple, cheap and quick treatment can be carried out, and the parasites of all the above diseases killed in a minute to a minute and a half.

My *modus operandi* in ringworm runs thus:—

- (a) The affected area is clipped.
- (b) The clipped site is well washed in warm water, strong with common washing soda, soap is applied with a nail brush.
- (c) The site is again well damped.
- (d) Powdered Calcium carbide is applied to the damped site and allowed to effervesce for a minute to a minute and a half. This is conveniently applied with a pepper-box, with holes in the lid enlarged. After that period it is hosed off.
- (e) The ringworm spot is now clean, and the ringworm parasite dead. Ink is squirted over the bald spot; this will hasten the growth of hair.

It is wonderful how quietly horses will stand when only small patches are under treatment. When the area is so large that it cannot be treated under the powder treatment, I find a good wash is made by putting one ounce of Jeyes' Fluid in a bucket of water, and two ounces of Calcium carbide as well. While the acetylene is bubbling through wash well with this mixture. I find large areas can be treated, but this requires carrying out daily for a week before a perfect result can be obtained.

A case of Sarcoptic mange in an Airedale bitch of mine I cured by placing her in a bath on the floor of which was a thick layer of Calcium carbide; the

bitch was placed in the bath, then water was poured in till the animal was submerged, the animal being kept in for five minutes. After four daily baths, every mange mite was dead. Ink was squirted on the bald spots, and hair had started to grow within a week.

We all know the Symbiotic mange commonly found on horses' legs. This can easily be cured in four to six days in the following manner. A long wooden stable bucket has its bottom well covered with powdered Calcium carbide, the horse's leg is then placed in, water is poured in until the affected part is submerged; if the horse can be persuaded to keep its leg in for at least five minutes, and this operation be repeated for five or six days running, all mites are dead, and the case is cured.

This treatment has one great advantage: it abolishes the necessity of Ringworm Lines. The average Ringworm Lines of an Artillery Brigade falls between 20 and 50 cases. If a V.O. starts with a Ringworm Line of say 24 cases he is entitled to eight men to do duty on those lines. Four men will disappear at least once a day to draw forage for the horses. Another three men will disappear three times a day to draw rations from the cook-house for the sick line attendants. This leaves one man who can devote the whole of his time to clipping, dressing, and general cleaning up of the lines.

One soon ceases to wonder why the treatment of ringworm is liable to become tedious.

One is always loth to argue against segregation in the treatment of skin diseases from a hygienic point of view, but under working conditions this policy is seldom advisable. I am convinced that if prophylactic measures were increased in grooming, clipping, and the thorough disinfecting of rugs, grooming kit, etc., and the acetylene gas treatment adopted as well, this epidemic of skin diseases would be stamped out within a month.

RICHD. STOKOE, Lieut. A.V.C.

ABSTRACTS FROM FOREIGN JOURNALS.

PHOSPHORUS METABOLISM IN LAMBS.

(1) There are marked differences in the percentages of the different forms of phosphorus occurring in lucerne hay, maize, and linseed meal, and in the ratio of phosphorus to protein in these feeds. A large part of the phosphorus of lucerne hay consists of the acid-soluble inorganic form; the phosphorus of maize is equally divided between acid-insoluble and acid-soluble, the soluble being largely organic; and the phosphorus of linseed meal is largely in the acid-insoluble form, the soluble being about equally divided between inorganic and organic phosphorus.

(2) Upon a ration of lucerne hay, maize, and linseed meal, lambs excrete in the urine only 0.2 to 0.5 of 1% of the total phosphorus ingested.

(3) The forms of phosphorus excreted in the faeces of lambs show that the forms of phosphorus in the feeds consumed undergo marked qualitative and quantitative changes during the processes of digestion and metabolism. A large proportion of the acid-insoluble phosphorus of the feeds is converted

into acid-soluble phosphorus, and a large part of the soluble organic phosphorus is also changed into acid-soluble inorganic phosphorus. Therefore, there is relatively only a small percentage of acid-insoluble phosphorus and a relatively large percentage of acid-soluble inorganic phosphorus in the faeces.

(4) The results of this metabolism experiment of 217 days duration, indicate that the phosphorus requirements for the normal growth and fattening of lambs does not exceed three grammes per day per 100 lb. live weight.

(5) There is no evidence of correlation between the amounts of phosphorus retained in the body on the one hand, and the amounts of phosphorus ingested, the amounts of protein ingested, or the body weights of lambs on the other hand.

(6) Variations in the quantity of digestible protein consumed from 1.56 to 3.19 lb. per 1000 lb. of live weight per day by lambs do not influence significantly the forms of phosphorus in the faeces, the total phosphorus in the urine, or the total phosphorus stored in the animal body, expressed in percentage of the total phosphorus ingested.—*Jour. Agric. Research.*

JAVA BEANS.

Phaseolus lunatus is the origin of many different kinds of tropical beans, some of which are edible while others are dangerous. The poison is Prussic acid, and although the production of this compound in seeds from cyanogenetic glucosides has been carefully investigated, our botanical knowledge of the subject is not yet sufficiently complete to allow of the statement that there is a definite coincidence between the presence of poison and colour, nor are the chemical facts sufficient to show whether the glucoside may not occur without the ferment in some cases and *vice versa*. In spite of certain observations to the contrary, it is not considered likely that the soil has any fundamental influence upon the poison content or colour of the beans. The principal influence is probably artificial selection. Up to the present it is possible to state definitely two things: (a) that the dark purple or black bean (the Java bean) is dangerously poisonous, and (b) that the creamy white bean (Lima) is perfectly wholesome. Guinard's test for HCN is:—Filter paper moistened with 1% picric acid and dried, then moistened with 10% sodium carbonate and dried, is sensitive for several months.

A strip suspended in a test tube containing 0.02 to 0.05 milligramme HCN becomes orange red in twelve to twenty-four hours.—(*W.I. Bulletin*).

F. E. P.

[The initial experiments on this question were started by the writer in 1909].

OBSERVATIONS UPON BOVINE ANTHRAX IN HOLLAND.

Vroemen has made some interesting observations upon bovine anthrax in Holland, which are summarised as follows.

The disease may be observed at all seasons; and the author has seen as much of it in those localities which have been constantly irrigated as in dry ones.

With regard to the age incidence, he finds that animals from one to three years old, and in good condition, are the most frequently affected. He attaches great importance to infected forage as a cause of infection, and above all to hay, grass, and rye and oat straw. Under ordinary conditions, he attaches less importance to water. But it is not rare to have sporadic cases of anthrax, even where the animals are kept in the stall and all fed with the same forage.

As regards the clinical symptoms, the author states that, according to the reports of owners, anthrax often manifests itself as a form of indigestion, and it is probable that, in districts where anthrax is prevalent, many cases that are considered to be simple indigestion are really cases of anthrax which recover spontaneously. The owners also report that sometimes animals have shown symptoms of violent indigestion from which they have recovered spontaneously, and, two or three weeks later, have shown similar symptoms terminating fatally, and anthrax proved to be the cause of the latter.

An accurate clinical examination enables anthrax to be differentiated from ordinary indigestion. In anthrax the temperature rises to 104° F. and more; the pulse is small, and counts from 84 to 120; the respirations are frequent; the appetite and thirst diminish; rumination ceases; the milk secretion disappears; and muscular tremors, groaning, and grinding of the teeth are observed. In the more severe cases marked weakness of the hind part of the body is seen. The evolution of the disease varies; in acute cases death occurs after a few hours, but more frequently it takes place after one, two, or three days. In some animals the author has seen the disappearance of the symptoms, with a recurrence after a few days, again followed by recovery.

The author remarks that, from the point of view of clinical examination, the microscopic examination of the blood has no importance. When the bacilli appear in the peripheral circulation, the case is already so far advanced that all treatment is useless.

As curative treatment, apart from serum, the author recommends large doses of turpentine, viz.: 100 to 150 grammes (= about 3½ to 5 oz.) repeated six hours later. He also agrees with Swiss veterinarians in advising the internal administration of creolin.—(*La Clinica Veterinaria*). W. R. C.

Practically all kinds of live stock can swim if hard pressed. Highland cattle in particular appear to be equal to any climatic emergencies, and their hardiness and open-air life have made the breed practically free from tuberculosis. The Island of Bernera is separated from the Lewis by Loch Roag. The grazings of the stock in Bernera are situated in the Lewis. Early in June the Bernera cattle are gathered together, and they swim to the Lewis shore. Then they make for their grazings on the moor and rough land. When the time comes for their return to their island the cattle of their own accord swim back. They very often prefer to accomplish the journey at high tide rather than at low water, when their passage could be more easily accomplished.

—*Dundee Advertiser*.

Royal College of Veterinary Surgeons.

EXAMINATIONS IN LONDON.

At a meeting of the Board of Examiners, held in London on December 10th, 1915, for the Written, and on December 16th for the Oral and Practical Examinations, the following gentlemen passed their Third Examination;—

Mr. P. W. Bloye	Mr. R. B. Nelder
E. C. Bowes	S. R. Rippon +
J. S. Garewal *	

The following passed their Second Examination;

Mr. C. S. Conder	Mr. S. H. Pettifer
H. Cooper *	

The following passed their First Examination;

Mr. L. N. Devenish	Mr. T. Knowles
C. H. P. King	T. R. Thomas

EXAMINATIONS IN GLASGOW.

The following Students were successful in the Examinations at Glasgow, on 10th inst. (Written), and 15th inst. (Oral):—

The following passed their Final Examination:

Mr. Arch. W. Campbell *	Mr. Neil A. M. Macewan
Thomas H. Timoney	Henry J. Hughes

The following passed his Third Examination:

Mr. David E. Orr

The following passed his Second Examination:

Mr. Isaac McCaulay

The following passed his First Examination:

Mr. William U. Main

There were present as ex-officio members: the College Staff and Mr. Alex. Russell, Secretary; also Mr. F. W. Garnett, J.P., F.R.C.V.S., Windermere, as representing the Royal College of Veterinary Surgeons.

EXAMINATIONS IN DUBLIN.

The following Students were successful in the recent Examinations at the R.C.V.I., Dublin.

The following passed their Final Examination:

Mr. F. J. Dunne	Mr. J. Mullaney
W. A. J. Flanagan	T. O'Connor
J. W. Hayes	T. F. O'Connor
T. J. Kenny	C. O'Driscoll
Ml. McCartin	

The following passed their Third Examination:

Mr. T. C. Hall	Mr. D. Mahony *
M. Farrelly	Wm. Reidy

The following passed their Second Examination:

Mr. W. E. Barry	Mr. W. Honigan
P. J. Cooney	A. J. Kelly
Ml. Donohoe	G. P. Kennedy
W. F. Fennelly	J. P. A. Morris
J. Heffernan	

The following passed their First Examination ;

Mr. R. J. Condy
M. J. Kennedy
Ml. O'Connor

Mr. Geo. West.
L. R. Swift
Wm. White

Marked thus † passed with First Class Honours.
Marked thus * passed with Second Class Honours.

THE CENTRAL VETERINARY SOCIETY.
(NATIONAL V.M.A.—SOUTHERN BRANCH).

A General Meeting of the Society was held at the Royal College of Veterinary Surgeons, 10 Red Lion Square, W.C., on Thursday evening, December 2nd, Mr. W. R. DAVIS, President, in the chair.

The following Fellows signed the attendance book :—
Messrs. N. Almond, F. W. Chamberlain, G. S. Heatley, Herbert King, W. S. King, G. H. Livesey, J. F. Macdonald, J. W. McIntosh, W. Perryman, R. A. Philp, F. G. Samson, W. N. Thompson, Sidney Villar, F. W. Willett, J. Willett, and Hugh A. MacCormack, Hon. Sec. Visitors :—Messrs. A. H. Archer and Bowhill.

Minutes. On the motion of Mr. SAMSON, seconded by Mr. MACINTOSH, the minutes of the last meeting were taken as read and confirmed.

Correspondence. The HON. SEC. announced that letters regretting inability to attend had been received from Messrs. E. L. Stroud and P. C. Woolston.

ANGLO-FRANCO-BELGIAN VETERINARY RELIEF FUND,
BRITISH COMMITTEE.

The HON. SEC. read the following circular letter :—
10 Red Lion Square,
London, W.C.

Dear Sir,—On behalf of the British Committee we beg to bring to your notice the claims of the Anglo-Franco-Belgian Veterinary Relief Fund, which has been started by the Veterinary Profession in France.

The Fund is being raised for the following reasons :—
Almost without exception the Veterinary Surgeons who were in practice in Belgium and in the parts of France now occupied by the invaders, have lost all their possessions ; their home has gone ; their goods and chattels ; their practice. Some of them are in immediate need of the necessities of life. All of them will require some assistance, when the war is over, to enable them to settle down again and earn their living in the now devastated provinces, or elsewhere.

The Fund is intended not only to relieve the present wants of any French or Belgian Veterinary Surgeons who are thus suffering from the effects of the war, but more especially to provide a sum of money to be used at the close of the war for the purpose of repatriating these unfortunate members of our profession, and their families, in the districts out of which they had been driven.

The Fund is to be administered by a representative Committee whose head-quarters are in Paris, and on which the profession in this country is represented by the following members :—

Sir John M'Fadyean (Président d'Honneur).
Jno. A. W. Dollar, M.R.C.V.S.
F. T. G. Hobday, F.R.C.V.S.
Brig.-Gen. John Moore, C.B., F.R.C.V.S.
Sir Stewart Stockman, M.R.C.V.S.

We earnestly call the attention of the Veterinary Profession in this country to the needs of their professional brethren and allies upon whom the misfortunes of war have directly fallen, and hope that a generous response will be made to this appeal for funds. The British Committee ask that all Veterinary Societies and Associations should consider the claims which the Fund

has on the sympathy of the profession, and that they will vote as substantial a grant as possible, and invite their members and others to subscribe.

All remittances should be made payable to the "Veterinary Relief Fund," and should be sent to the above address.

We are, yours very truly,

FRANK W. GARNETT, Chairman.

JNO. A. W. DOLLAR, } Hon. Treasrs.
T. SALUSBURY PRICE, }
STEWART STOCKMAN, } Hon. Secs.
FRED BULLOCK, }

On the motion of Mr. Livesey, seconded by Mr. Willett, the letter was referred to the Council for consideration and report.

RINGWORM AND MANGE, AND THEIR TREATMENT.

F. W. CHAMBERLAIN, M.R.C.V.S., Wimbledon.

Mr. Chairman and Gentlemen,—We are concerned to-night with the discussion of Ringworm and Mange and their treatment. Both diseases are very prevalent at the present time among the horses in the many army units scattered through the country, much of the trouble having been imported and spread by remounts.

So many civilian veterinary surgeons are acting as veterinary officers i/c of brigades of Artillery and similar bodies of horses just now, and are experiencing trouble with the diseases in question, that the subject should be one of general interest.

I have undertaken the responsibility of opening the discussion, and hope to indicate a few points that will admit of exchange of opinions among us. Mark Twain described a placard in a mining-camp saloon :—"Don't shoot the pianist ; he's doing his best !" Please extend to me the same consideration.

With your permission I will open on the subject of mange. While recognising the fact that we are particularly to focus our attention on the subject of treatment, it seems to me that certain matters—such as the habits of the parasites, must be introduced before we can logically enlarge on our methods of annihilating them. There are three groups of mange-mites :—(i) the Psoroptes, causing Psoroptic mange ; (ii) the Sarcopes, involving Sarcopic mange ; (iii) the Symbiotes, which confine their attentions to the legs, causing "itchy-legs," or "leg mange." This symbiotic group does not interest us to-night, and I expect we shall dismiss them summarily.

Psoroptic Mange chiefly invades those parts of the body endowed with "horse-hair," namely, the mane and tail, from which they may spread to the space between the branches of the lower-jaw to the breast and thighs. The punctures of these parasites on the skin give rise to an eruption of small pimples which at first are of the nature of blisters. When these blisters burst, or are broken by friction on the part of the animal, a seropurulent discharge exudes, which keeps the area in a moist condition. Of these two forms of body-mange the psoroptic is essentially the moist form. The parasites live on the epidermis and under the crusts formed by the drying up of the exudate from the pimples and the epidermal dandruff. The itching in both this and the sarcopic form is attributed to the irritating saliva which the insects deposit in the skin while obtaining serum for their food.

Sarcopic Mange generally, perhaps, begins on or near the withers and spreads over neck and trunk. In point of fact, however, position of the eruption is not much good as a guide. Moreover, psoroptic and sarcopic mange are occasionally co-existent on the same animal.

The sarcopes do not confine their attacks to the outer layers of the epidermis. Such enterprising females as are pregnant penetrate the epidermis and burrow down

and away from the point of entrance for a distance of say half-an-inch, forming a tunnel or gallery in which she lays her eggs *en route*. Consequently, by the time a pimple forms at the inoculated spot the militant female has left it, and cannot be found when search is made for her in skin-scrappings from the part.

As is easily understood, psoroptic mange is always amenable to correct treatment, the parasites being always accessible on the surface of the skin. *Per contra*, sarcoptic mange at times baffles all efforts.

Appropos the vitality of the parasites, it has been estimated by authorities on parasitology that psoroptes may live, under favourable circumstances, as long as two months when removed from their host: sarcoptes about one month. Further, it has been affirmed that the period required for the eggs of the mange acari to become hatched varies according to the temperature, within reasonable limits, from two to ten days.

Transmissibility. I certainly consider that this question should be discussed here. In the event of mange being very prevalent in, say, the horses of a brigade, the question would inevitably arise from outside:—"Are the dressers in any danger of infection?" Now, I have heard members of our profession assert precisely opposite opinions on this point in most impressive and dogmatic fashion. I think this should be an interesting item for our consideration.

"Itch," or sarcoptic scabies of man seems almost identical with equine sarcoptic mange, though the parasite is not identical—at any rate in size.

I cannot remember ever seeing an instance of transmission from the dog and cat: but I vividly recollect seeing a unilateral case in a horse ridden by a "first whip" in the hunting field, caused by his bringing home in his saddle straps the "mask" of a mangy fox the hounds had killed.

TREATMENT.

The first essential, having regard to the Parasitic Mange Order, is to report the case to the local authority *via* the police. Army horses, however, are exempted. In a big congregation of horses the next consideration is isolation and segregation. If it be winter, the clipping machine will now be required. It is as well to clip all horses on the same piece of ground, and to burn the severed hair after. The clippers should be well disinfected after each horse is clipped, by immersing the blades in paraffin, and working the handles while the blades are so submerged for about one minute.

Winter or summer, I think the next step is to thoroughly singe the animal. The lamp is probably a more important factor in the treatment of mange than is generally recognised. The coagulation of the albumen of such eggs as are superficially placed is likely to be effected by the flame to an extent sufficient to render most of them sterile. I then have the animals washed.

I think it is understood that there is a right and a wrong way to wash a horse on these occasions. It is well to begin at the face and head, and work backwards, as in any skin-irritation due to living parasites it is essential that no "islands of refuge," such as the eyelids and ears afford should be left unassailed. If the washing begins at the head the parasites are forced backwards and are effectually brought into the area that will unquestionably be most thoroughly dressed. The mane and tail, too, require particular attention, as there is always a quantity of scurf in these regions to afford a stronghold for the invader.

To summarise then:—Clip, singe, wash.

I would prohibit the use of rugs altogether, and forbid all attempts at grooming. It is, of course, a *sine quâ non*, if one prohibits the use of rugs, that the animals be warmly housed. And now the animal requires alternate dressings and washings.

Skin dressings. I venture to think that it is the greatest possible mistake to order continued daily infraction of whatever remedy is selected. I fail to see what useful object is to be attained thereby.

In the somewhat parallel case of pediculosis we are in the habit of applying one or two daily dressings to dispose of adult lice, and then allowing an interval for the "nits" to hatch out. Similarly, in psoroptic mange, two or three proper dressings should, I imagine, suffice to destroy the mature acari. I then prefer to wash the animal and allow an interval of three days before resuming dressings.

In sarcoptic mange the males, unimpregnated females and larvæ are on the surface of the skin. Three properly applied dressings should suffice for the former two. A short interval would allow the larvæ on the skin to develop; and the eggs in the channels the while are undergoing metamorphosis to the larval stage, and then gradually emerge—like the animals from the Ark!

My rooted objection to continued daily dressings is this:—All mange dressings are irritant, some more than others, of course, and their too enthusiastic application causes dermatitis and exfoliation most difficult to control. I have seen horses "peel" in most alarming fashion, making the remedy almost as bad as the disease; and for my own part I have long since discontinued the practice.

Of mange dressings it may be said:—"Their name is legion." They range through preparations of Mercury, Phenol, Benzine, Ichthyol, Nicotine, Kerosene, Turpentine, Sulphur, Coal-tar preparations, and proprietary concoctions, to that truly domestic prescription—Gas-water.

Probably the selection of the remedy is often of less importance than the mode of its application. One thorough conscientiously applied dressing will prove more effective than any number of partial, incomplete, and "skimpy" applications which leave certain diseased parts untouched.

In my student days I remember a remark from one of the professors, that savoured of the wisdom of the oracle:—"There is a fashion in medicines as in ladies' hats." I think that dictum might apply particularly to mange dressings. We vacillate from one to another, and all the time there is nothing better than the old combination—Sulphur, with oil as a vehicle. Sulphur has been used as a skin-dressing from time immemorial, being known to the ancients as a specific for "itch" in man and mange in animals. The mange-mite cannot live in its presence, or in that of Sulphuretted hydrogen or Sulphurous acid, both of which are developed when Sulphur is brought into contact with the skin. It is one of the few specifics in veterinary medicine, and cases of mange that yield to any treatment at all will yield to the combination of sulphur and oil: the customary addition of an alkali is an improvement in that it tends to dissolve the dandruff or epidermal scales.

I do not propose to discuss the necessary disinfection of rugs, utensils and stabling.

I have occupied so much time in my remarks on mange that I propose to deal very briefly with the subject of ringworm.

RINGWORM.

I had always personally regarded this disease as being distinctly rare in the horse, and ordinarily I think it is. Lately, however, we have seen an inordinate quantity of it among remounts. The cause is not far to seek. These remounts are purchased in huge quantities in America and Canada: they travel sometimes immense distances by rail (I have known them travel 3000 miles in this way: they are detrained at intervals *en route*, exercised, watered and fed); they are detrained in dépôts adjacent to ports of embarkation, kept there a variable time in corrals, and then undergo their adven-

turous journey across the Atlantic. In this way, perhaps, they have not had a brush on them for a good three months, and all the time dirt is accumulating. Nothing provokes the appearance of most forms of parasitic skin disease more than this factor. As regards its spread the herding of the animals in coralls and on shipboard affords every facility.

The lesions of ringworm commence with the formation of a small pimple, and gradually enlarge in circular fashion until the typical rounded patch associated with the "Trychophyton tonsurans" is produced: the lesions varying when fully formed from the size of a shilling to that of a florin. Irritation is not at all marked.

Two remarkable things about the parasitic fungus are that while the eruption spreads centrifugally from the pimple stage until it attains the size of a florin, it never exceeds that dimension: and secondly that it undergoes spontaneous cure. We see this annually in ringworm of calves. The same things obtains in the horse. A given ringworm lesion will heal spontaneously in 40-50 days. Meanwhile, however, any advantage from this commendable resolution is generally neutralized by infection of other parts by transmission of spores. Hence the need of remedies to destroy the vitality of the fungus.

Treatment. Segregation of affected animals is desirable and also that of animals affording room for doubt. It is sometimes impossible to be positive till a horse is clipped. I am, personally, in the habit of clipping, singeing and washing as discussed under mange: of strictly prohibiting use of rugs or body-brushes. In ringworm the main difficulty often lies in getting rid of the horny scurf that surmounts the lesion. My practice is to apply Liquor potassae twice daily for three or four days with a suitable brush (a one-inch painter's fitch is a capital tool for the purpose). Subsequently I apply Liquor iodi in preference to the tincture. Cases invariably yield to treatment, but rarely under twenty-one days and often longer. I have on occasion used red Biniiodide of mercury "blister" (1-8), and regard it as quite effective. Ringworm in the horse seems quite amenable to treatment, but involves more time than I formerly imagined.

I have had one or two dressers infected about the arms, and think it distinctly a good idea to advise them *not* to roll up their shirt sleeves before setting to work to apply a dressing. The sleeves guard the arm from infection.

DISCUSSION.

The PRESIDENT thought the members would agree that Mr. Chamberlain had treated the subject very succinctly, and given a practical essay on the two diseases with which he dealt, from the point of view both of their incidence and treatment. He could confirm Mr. Chamberlain's statement that it was not uncommon for mange to be transmitted to man. Some years ago, when he was in Edinburgh, he was the first to describe the occurrence of sarcoptic mange in cattle, a fact which up to then had been denied by the authorities. He sent specimens of it to Professor Raillet in Paris, who informed him that it was distinctly sarcoptic mange. In that case almost every one of the people who milked the cows had their arms affected, and one of the men said to him: "I wish when you are sending something up for the cattle you would send something up as well for us to dress ourselves with."

Mr. Chamberlain had not stated what he would use for washing the horse. Personally, he considered the best medium was an alcoholic solution of soft soap, to wet the body of the horse with warm water and then pour on the alcoholic solution, working it well into the skin. That made a splendid lather, and was a much better method than using hard soap. He agreed with Mr. Chamberlain that it was not advisable to put on rugs. He considered it was essential, in civil practice,

if a horse was dressed with an oily preparation in the middle of a hard winter, that something warm must be used, otherwise pneumonia would supervene. Instead of using rugs, it was quite easy to use long wheat straw, fastening it on with a straw band; (a split sack over the straw) which would keep the horse warm and avoid all danger of chill.

He quite agreed with Mr. Chamberlain's suggestion that the horse should not be dressed every day. Personally he thought once a week was quite sufficient, if a dependable dressing was used and the animal was properly dressed. He agreed also that sulphur and oil, if they were properly applied and the horse was well washed, and especially if there was good grooming afterwards, formed the best treatment. In his opinion the definite cure of mange was brought about by thorough grooming.

The question of disinfection, which Mr. Chamberlain had not referred to, was as important as any measure in the treatment of mange. A client took a farm where mange had existed for years, and he had not been on it a couple of months before mange broke out. The question arose as to how the harness should be dealt with. He remembered reading once in *The Veterinary Record* that the harness should be boiled under such circumstances, but good harness would be ruined if that was adopted. In the case to which he referred an old outhouse was used for the purpose of disinfecting the harness, every crevice being plastered up. Every Saturday night the harness was taken off the horses and put into the outhouse, in which were four trays of sulphur and little spirit lamps by means of which sulphurous anhydride was developed, and the whole of the trouble was eradicated in six months.

Ringworm was very easily got rid of. Personally he had always found that acetic acid applied with a brush was as good a remedy as anything.

Mr. G. LIVESEY said he had seen many cases in which sarcoptic mange in the dog had been transmitted to human beings. The owners of the dogs were usually ladies, the disease was transmitted to the fore-arm, the neck, or the shoulder, from the common habit of the dog being with the client in bed. It was very easily cured in the human being by a simple sulphur dressing. Disinfection was one of the most important considerations in the treatment of mange in the dog. Several cases of that kind had come under his notice, but one in particular, in which mange occurred in a house perpetually for about two years. Every dog that lived in the house was affected at some time or other, not due to any want of proper care of and attention to the dogs themselves, but to the fact that infection was conveyed from an old fur rug which lay in front of the dining-room fire, and the dining-room carpet. The rug was eventually destroyed and the carpet was baked, and from that day to the present there had never been another case of mange in the house. That and many similar instances proved that disinfection was absolutely necessary if the disease was to be eradicated from a house.

Ringworm was fairly tractable, but he had not found it such an easy disease to cure as some people thought. It needed constant attention, otherwise it broke out again just when it was thought it had been cured. Then again he thought disinfection was the stumbling block. He remembered a case he reported to the Society of a little kitten that infected fifteen people in different houses, including himself. In that case the spores of the ringworm lay in the body of the hair and caused absolutely no skin lesion. If ringworm spores lay latent in hairs, and those hairs lay about a house, it was impossible to say when they would awaken to activity and cause trouble. Where an infective disease caused by parasites—either vegetable or animal—occurred, it was not enough simply to cure the skin lesion; efforts must

be directed towards eradicating the parasite from the premises. He had found it was a most satisfactory procedure to bake the gear, clothes, and other impedimenta, and next to that the most satisfactory treatment was to thoroughly soak them with formalin solution. It was impossible in many cases to subject the articles to the fumes of a sulphur torch; many clients who possessed nice silks and satins would not put up with that, but they would all tolerate formalin. He agreed with Mr. Chamberlain that in the treatment of mange they possessed a specified in sulphur. If sulphur was used intelligently, and was properly applied by a person who had experience, he did not think any fear need be entertained that a successful result would not be forthcoming.

Mr. McINTOSH thought there was no doubt the sarcoptic form of mange was the most troublesome to deal with. In well-fed, well-conditioned and properly groomed animals, housed under favourable conditions the disease was of rare occurrence, but where the opposite conditions prevailed, outbreaks were not infrequent and were usually severe.

The watchful and observant individual—the really intelligent horseowner—who recognises the importance of dealing promptly and energetically with the first recognised symptom of the disease, is much more likely to succeed in eradicating this highly troublesome complaint than the man who closes his eyes to the existence of the malady at the onset, preferring to keep the animal at work and apply partial and intermittent dressings.

The symptoms and severity of the attack depended on the amount of infection and the hold that the disease had gained before measures were taken to combat it. The first symptom is intense itching, which, particularly at night, in warm stables or after exertion, becomes very acute. The animal will rub against fixed objects, bite and scratch the affected spots, and the irritation thus wrought very considerably alters the otherwise simple phenomena. As time goes on the hair falls out or breaks, inflammatory processes become extensive, the skin thickened and creased, and the animal generally becomes a picture of misery.

In treatment, he thought the selection of a dressing—while very important—was of less importance than the manner of its application. The first factor of success in treatment was the personal element, the vigilance of the horse-owner in the first place, and in the second place the thoroughness of the treatment and supervision afterwards.

Personally, on obtaining the slightest indication of the disease he had the animal isolated, clipped, singed and dressed, and everything that had been in contact with the animal properly disinfected.

As a dressing he used in the first place one of paraffin to two of oil, and had the animal practically soaked in it for twelve hours or so, afterwards washing the animal with "mercurial soft soap." If further dressing were required, he had great faith in the old dressing of sulphur, spirit of tar, and rape oil. In conjunction with this treatment he thought saline medicines ought to be administered, and generous and nutritious feeding was imperative.

He had never experienced any great difficulty in dealing with ringworm, although in young cattle it was sometimes troublesome. In horses he generally found the disease yielded to treatment readily. One or two dressings of iodine, or any of the mercurial preparations was, as a rule, sufficient. Disinfection of all equipment in this, as in mange, must be thorough and complete, otherwise recurrences will take place. In the case of harness he has all the padding removed and destroyed, and the leather properly scrubbed with a strong disinfectant. Brushes, clothing, etc., he prefers to destroy.

Mr. HEATLEY mentioned a case in which a good deal of trouble was experienced with 400 horses suffering from ringworm which had been treated by a brother practitioner who applied a mercurial preparation. He applied pure glacial acetic acid with a camel-hair brush, and within three days the trouble was exterminated. He adopted the same treatment in another outbreak, and one application was sufficient to eradicate the trouble.

Mr. BOWHILL enquired how long a time elapsed before the skin resumed its normal condition and the horse could be passed as well.

Mr. HEATLEY said it was possible to certify that the horse was healed in a few days. Of course the hair had not come again, but a cicatrix was formed.

Mr. BOWHILL thought that would not be sufficient evidence that there was no longer any infection. He had treated a considerable number of cases of ringworm, and obtained the best results from chloral hydrate one dram, carbolic acid one dram, tincture of iodine three drams, and 40 minims of 40 per cent. solution of formalin. That applied with a camel-hair brush was very effective. He afterwards used a sulphur ointment with a little tincture of iodine. When the hair subsequently began to grow the veterinary surgeon was in a position to say that the horse was healed.

Mr. ARCHER said his own clinical observation led him to believe that mange as a disease was not transmissible to human beings, although he quite agreed that the parasite was. A parasite set up an irritation and symptoms of mange in the human being, but as far as he knew the parasite did not reproduce its kind on the human being. Unless, therefore, fresh invasions of the parasite were obtained it died the same way that a louse would do. Lice from the cow would get on a human being and cause a considerable amount of irritation, but they did not propagate; and he believed that was exactly the same in the mange parasite of dogs and horses. In the case to which the President had referred, he thought there was probably a repeated invasion of the human being from the cows. He thought it was very advantageous to use rugs after dressing horses suffering from mange or ringworm; they entrapped a certain number of mange parasites if any escaped from the body, and if subsequently the rug was burned the parasites were destroyed. It was very unfair to a horse suffering from the disease that it should receive a dressing and then be exposed to the weather; it was essential that some sort of covering should be used. There was a very considerable mixing up of ideas with regard to the cure and the eradication of ringworm. The two were absolutely different. The fungus of ringworm could easily be killed, but it was quite another matter to destroy the spores. The spores would stand an immense amount of exposure both to heat and cold, and also to chemical agents, without being destroyed. He was quite sure that strong mercurial soap would not kill them, and he did not know positively of any dressing that could be safely applied to extensive surfaces of a horse's skin that would. He admitted a flame would destroy them, but he knew of no dressing that it was safe to place on a horse that would destroy the spores. As a result, horses which were supposed to be cured of ringworm were repeatedly sent to various places, but in less than a fortnight they were smothered again, simply because the spores had not been destroyed. In his opinion, ringworm could not be thoroughly eradicated under a period of something like six months, in the ordinary conditions met with in practice.

Mr. McINTOSH, in reply to Mr. Archer's remarks, said he thought that unless the disease was eradicated the animal was not cured. He had treated several cases of ringworm in which there had been no recurrence. In a case where a recurrence occurred, the animals obviously had not been cured. He was perfectly satisfied

that the spores could be killed if they were dealt with properly, and in his experience mercurial preparations would have that effect.

Mr. J. WILLETT agreed with Mr. Chamberlain that there were many cures for mange, but, personally, he had always pinned his faith on mercurial soft soap, with which he had had great success. He had heard many practitioners say that that treatment caused a great deal of trouble through exfoliation of the hair, but in his opinion that was due to the mode of application. He had seen men put a dab of soap on the skin, and then start rubbing the part with the brush until a good lather formed. As a result, a blister was raised on that particular spot, and a large surface was denuded of hair. The proper treatment consisted in having the horse thoroughly soaked over with warm water, and then putting the soap on the brush itself instead of on the hair, a lather being formed in that way. He was rather surprised that Mr. Chamberlain did not mention that when the horses were clipped that operation should be carried out in a stable or a shed so that the wind did not blow the hair about all over the place, causing areas of infection. He also adopted the procedure, after the animal was clipped, of having it singed at least twice a week for a fortnight, and with that treatment he had experienced little trouble with the disease. He did not agree with Mr. Archer's remarks as to the use of mercurial soap in ringworm, as in his opinion it killed the complaint.

Mr. SIDNEY VILLAR said it occurred to him that the reason for the somewhat divergent views which had been expressed was that different forms of ringworm had been under consideration of different speakers, although he did not suggest for a moment that there was more than one form of vegetable parasite concerned. Ringworm in the last year or two had been very prevalent, and had assumed other forms than the usual one. The usual form consisted of rings of the size from a shilling to a florin, as Mr. Chamberlain had said, but in recent years he had seen two others, in one of which there was a number of small spots, perhaps the size of a threepenny piece, which, when examined under the microscope, were found to be ringworm. Another form was of a more diffused nature; it spread practically all over the horse, and it was usually said that the horse was suffering from mange, due to the fact that on scratching the animal it gave a movement of the lips which a horse suffering from parasitic mange gave, but there was nothing like the intense irritation and itching which was found in mange. All over the body in big patches, and in some cases, right up the inside of both thighs and on the prepuce, instead of getting the parasite of mange the ringworm fungus was found. He did not think it was possible to tell which was ringworm and which was mange in those diffused cases, except by the use of the microscope. That was the only method of differential diagnosis. In the scattered spots he had found the old dressing used for calves—Perchloride of mercury, 12 grains to the ounce, applied twice with the finger, an infallible remedy. It was necessary also to apply the ointment for a very short distance round the circumference of the bare spot. That ointment needed no preliminary treatment except that the horse should be washed. He never heard of a case of infection from a man applying it with the finger. In the diffused cases, it was utterly impossible to think of dressing a horse all over with a solution of Perchloride of mercury strong enough to kill the fungus of the ringworm.

Paraffin was used, not so strong as that mentioned by Mr. McIntosh, of one to two parts of oil, but one to ten parts of oil. It was applied three times in the course of a week; then the animal was washed, and it was almost invariably cured after one week's treatment. Of course spots might subsequently appear, which were then treated with Perchloride of mercury. There could

be no doubt that there was a good deal of mixing up of diffused ringworm and parasitic mange. In the treatment of mange he swore by sulphur if properly applied, which was the secret of an absolute cure.

He desired most particularly to emphasise the necessity of not treating animals with what were usually known as disinfecting fluids. He would not mention the names of any preparations, but he had found that the application by grooms, attendants, and horse owners of disinfecting fluids had produced greater trouble than the mange or ringworm itself. Not only that, but in many cases it absolutely prevented the cure of the diseases, because the irritation and dermatitis that was produced, and the desquamation which followed, were the very conditions under which animal and vegetable parasites flourished.

He supported Mr. McIntosh's statement with regard to the necessity of generous feeding when horses were affected with skin diseases. It was a very general idea among country people that corn should be stopped and the patient given a dose of aloes. That was absolutely wrong. The horses should be given plenty of corn and linseed cake, or anything to soften the skin. Sulphur used internally was of very great benefit in mange. But whatever the treatment adopted, the great thing was to be thorough, and to give the case personal attention, otherwise a speedy cure would not be obtained.

Mr. W. PERRYMAN thought the essential principle in the treatment of mange was thoroughness. It did not much matter what dressing was applied so long as it was applied thoroughly to all parts. He desired to know whether Mr. Chamberlain advocated that the whole of the body should be dressed from head to foot. Also, did Mr. Chamberlain advocate the clipping of the mane and tail, because a good deal of mange sometimes existed in those parts. He believed a great deal of mange was retained in stables in the vicinity of the legs. With sarcoptic mange it was possible, especially in the region of the hock, to have live patches, and unless the animal were dressed from head to foot with some dressing the desired effect was not obtained. Personally, he always clipped the legs as well as the mane. He had also come to the conclusion that the parasites of mange would live in harness for a much longer period than Mr. Chamberlain had mentioned. He thought it was essential that all harness should be disinfected, and that before harness was sent to the ordinary harness-maker for repair the lining should be cut out, otherwise there was a possibility of the old lining being used again and infection being spread. He always suggested that the whole of the harness should be thoroughly washed in Carbolic, and that it should then receive an application of ordinary Rape oil and paraffin.

He disagreed with what Mr. Chamberlain said about the clothing. In the average stable it was essential that, after an animal had been clipped, especially during the present kind of weather, some form of clothing should be given to it. He always suggested that old sacks or, better still, hop pockets should be used, which could be burned or thrown into disinfectant after the dressing had been applied. It was a cheap method, and it materially assisted the growth of new hair, and certainly obviated the danger of chills, kept the animal warm and helped him to recover from the disease. He agreed with the statement made that the animals could not be fed too liberally. The whole of the success in treating animals with mange depended upon being thorough and giving personal attention to the work. He used, as a dressing, ordinary oil and sulphur, and a preparation of tar. Continuous dressing was, he thought, wrong. He tried to get two dressings, and then a wash; then to leave it for a week, and apply another dressing all over. Constant dressing was detrimental to the animal, because the whole of the skin got clogged up and the animal was prostrated. He thought it was a good

plan, especially in bad cases, to give a dressing all over on the Saturday, and to give the horse a wash on the Sunday or Monday, after he went to work again. It was impossible to say that all the parasites or the eggs had been hatched out and killed, and for that reason it was advisable in many cases to give an extra dressing, although apparently the case was cured.

Mr. McINTOSH enquired whether Mr. Villar had ever used paraffin in a larger proportion than 1 in 10.

Mr. VILLAR replied that he had used it 1 in 4, and as a result the animals were blistered.

Mr. McINTOSH said he had used it 1 in 2, and although it had been applied all over the animal he had never yet seen a blister.

Mr. VILLAR thought that possibly the class of horse might have something to do with that. He presumed the horses in question were thick-skinned cart horses.

Mr. McINTOSH said that the horses he had to deal with were nearly all Scotch horses, and they, like the people of Scotland, were rather thin in the skin.

Mr. PERRYMAN mentioned a unique experience he had a few years ago in connection with a man who dressed three horses all over with gas water. When he saw them, two of the horses were in a very prostrate condition, passing copious quantities of blood—hæmorrhage from the kidneys—and one of them died. The use of the gas water had a very drastic effect, the most notable symptoms being hæmorrhage from the kidneys and great prostration.

Mr. ARCHER, in reply to Mr. McIntosh's remarks, said that when he (Mr. Archer) spoke about the eradication of ringworm he meant the eradication of an outbreak of the disease and not the eradication of the fungus itself. When an outbreak of ringworm occurred, by the time the veterinary surgeon was called in to treat it numerous spores had been spread about, not only on the animals but on the buildings. That was what he referred to when he said it was so difficult to eradicate the disease. He did not mean to say that when a veterinary surgeon was called in in private practice to treat a case he could not cure it. It was quite easy to cure an isolated case, but the eradication of a well-established outbreak where the spores had been already spread broadcast over the animal and its surroundings was quite another matter.

Mr. F. W. CHAMBERLAIN, in reply to the President's remarks, said that in the case of mange he was in the habit of washing the animals merely with soft soap prior to dressing. In the case of ringworm, as he dressed only the local lesions but did not dress the animals all over with the ringworm dressing, he always made it a rule to wash them with an emulsion containing not merely paraffin and oil, but soft soap one pound, boiled down to a solution in a gallon of water, adding a quart of kerosene and a quart of linseed oil. The emulsification obviates the blistering effect of the paraffin. He had always known that as Blenkinsop's Emulsion. He did not wish the President to imagine that he by any means under-estimated the value of disinfection, both as regarded tools, rugs, and stabling. The President seemed to rely principally on fumigation for the disinfection of saddlery. His own practice was identical with that of Mr. Perryman, namely, to rip open the saddle and pull out the flock, lining and stuffing, to make sure that it would be renewed and re-lined. In the case of military saddles, which were not lined in the ordinary way, but were bare, he placed reliance on scrubbing with a strong solution of coal tar preparation. Mr. Livesey had touched upon the question of ringworm in the cat. Personally he was invariably emphatic in counselling the destruction of cats with ringworm. He had no objection to rugs being employed in isolated cases of mange, but he never put the rug next to the skin. He generally placed a sheet under the rug, which permitted of its being boiled afterwards. His objection to rugs

applied at the present time when there were so many horses that had to be attended to, and so many new hands recently recruited to help in the stables who did not know anything about horses. He found such people grossly negligent in regard to the use of rugs. He had stated in his Paper that if rugs were not used it was absolutely a *sine qua non* that the animal should be warmly stabled. It would be criminal to treat animals with sulphur and oil and then turn them out in the intensely cold open air. He recently received a letter from a friend in France who told him that a good deal of trouble was being experienced in that way abroad. The same treatment was now being adopted as that used for the men, namely, to apply chloride of lime. An extensive trial was being given to the application of powdered chloride of lime on the skin on the ground that cold was avoided in that manner. He thought Mr. Archer hit the nail on the head in saying that the trouble in ringworm was in dealing with the spores. He agreed with Mr. Willett that the horses should be clipped in one stall. He always had a stall set apart for that purpose. Mr. Perryman asked if he was in the habit of clipping the mane and tail. He always had the mane "hogged" if possible, but he never disfigured the animal by clipping the tail close. The next best thing was to make transverse clippings with scissors so that the dressing could be worked in. The mane and tail were always difficult parts. The opinions that he had given in his opening contribution with regard to the vitality of the parasite were not his own, but the views expressed by Gerlach and Neumann. Old harness was a fine habitat for the parasite. How long it would live there he was not prepared to say, although Mr. Perryman seemed to be under the impression that the parasite would live for a long time off the host in such a thing as an old pad which contained a lot of sebaceous secretion.

On the motion of Mr. J. WILLETT, seconded by Mr. McINTOSH, a hearty vote of thanks was accorded to Mr. Chamberlain for his kindness in opening the discussion, and the meeting terminated.

HUGH A. MACCORMACK, Hon. Secretary.

GLASGOW VETERINARY COLLEGE.

The annual distribution of medals and certificates won by the students of the Glasgow Veterinary College (Incorporated) took place in the Lecture Hall of the College at Buccleuch Street on Wednesday, 8th inst. Sir Hugh Shaw Stewart, Bart., Chairman of the Governors, presided.

The Chairman, referring to the war, said it was interesting to note that the Roll of Honour of the College included 77 qualified veterinary surgeons, 17 students, and two lecturers. The loss caused by the death of Principal McCall, he went on to state, was felt not only in that College, but also throughout the whole veterinary profession in the west of Scotland, and indeed over a wider area. As to the financial position of the College, he pointed out that if they had larger funds at their disposal they could do a great deal more in the way of research. While it seemed an odd time to ask for money, yet the business of the College was to help to conserve the food of the nation, and if they had more money they should be able to undertake further investigations into those scourges of our sheep flocks, namely, braxy and louping-ill, and thus be able to diminish the great waste of sheep life which was going on over a large part of the west of Scotland. Mr. Peter Reid, who was an enthusiast in this matter, proposed to bring up the question at an early meeting of the Governors with a view to getting the Government to assist them to put a stop to this waste of sheep life. (Applause.)

PRIZE LIST.

The medals granted by the Highland and Agricultural Society, the late Principal McCall, and the late Prof. Allen Thomson, and Certificates of Merit were awarded as follows:—

Chemistry. Medallist and 1st class certificate: J. H. Motion; 1st class certificate: T. H. Mische; 2nd class certificate: Wm. G. Jones.

Junior Anatomy. Medallist and 1st class certificate: T. H. Mische; 1st class certificates: J. H. Motion and J. Turner; 2nd class certificates: R. Scoular and Wm. G. Jones.

Biology. Medallist and 1st class certificate: J. H. Motion; 1st class certificates: T. H. Mische and B. Sayer; 2nd class certificate: Wm. G. Jones.

Senior Anatomy. Medallist and 1st class certificate: R. R. Moodie; 1st class certificates: G. L. Bradley and D. G. Wishart; 2nd class certificate: G. Corson.

Stable Management. Medallist and 1st class certificate: D. G. Wishart.

Physiology and Histology. Medallist and 1st class certificate: D. G. Wishart; 1st class certificate: G. L. Bradley; 2nd class certificate: G. R. Moodie.

Pathology and Bacteriology. Medallist and 1st class certificate: J. S. Keane; 1st class certificate: A. L. Robertson; 2nd class certificate: C. M'Pherson.

Materia Medica and Therapeutics. Medallist and 1st class certificate: J. S. Keane; 1st class certificate: A. L. Robertson; 2nd class certificate: C. M'Pherson.

Hygiene and Dietetics. Medallist and 1st class certificate: J. S. Keane; 1st class certificate: A. L. Robertson; 2nd class certificate: C. M'Pherson.

Allen Thomson Gold Medal for the best Professional Examination on Anatomy: D. G. Wishart.

Dick College and H. & A. S.

At a meeting of the directors of the Highland and Agricultural Society held on Wednesday, 1st inst., in the Society's Rooms, George IV. Bridge, Edinburgh, a letter was read from Professor Rankine, chairman of the Board of Management of the Royal (Dick) Veterinary College, making an appeal for a further grant from the Society. The war has given rise to formidable difficulties, which has caused serious embarrassment. The subscription list was brought to a standstill when war was declared, and contracts now materially exceeded in amount the probable cost as originally estimated. The Board would be grateful if the Society would make an addition to the grant of £400 already contributed to the building fund, and would bring to the notice of agriculturists and stock breeders the urgent needs of the College.

A letter was read from Mr. Price, M.P., who expressed the hope that the appeal would meet with a substantial response, as the financial condition of the College was in a perilous state. So far, with the honourable exception of Lord Rosebery, no single landed proprietor, stock breeder, or farmer had contributed to this scheme, which seemed scarcely fair, as the subject should appeal to them more readily than to any other class in the community.

Mr. M'Hutchen Dobbie took exception to the statement in the letter.

The matter was remitted to the Finance Committee for consideration and report at next meeting.—*The North British Agriculturist.*

Prosecution: Coal Mines Act, 1911.

Wilfrid H. Heppell, agent of the Cwmaman Coal Co., and Wm. Jones, manager, were summoned by the Home Office for a breach of the Coal Mines Act, 1911, viz., neglecting to provide continuous and thorough ventilation, by intake air, in the underground stable, and for not keeping the stable in a sanitary condition. Mr. T. R. Davies, H.M. Inspector of Mines, prosecuted, and Mr. A. Prosser (Messrs. C. and W. Kenshole and Prosser), defended.

Mr. Davis said that the stable in question was the Red Coal Stable. There was no complaint against the condition of the horses at the colliery. The stable was very hot when visited by the inspector, and was swarming with flies and beetles, and it was absolutely impossible for the horses to get proper rest. The quantity of air was absolutely inadequate for the proper comfort of horses. There was an airway in, but no way out. The attention of the management was called to the place in February, 1913. On January 6th, this year, their attention was once more called to the insanitary condition of the place. Another visit was paid to the stable in September, and a letter was sent by Mr. Atkinson, H.M.I., to the Company, and Mr. Heppell replied that they were withdrawing the horses from the stable in question. When an inspector called at the colliery on October 15 last, it was found that the promise had not been kept, and that the stable was still being used.

Thomas Lloyd Evans, H.M. Inspector of Horses for the South Wales Division, bore out Mr. Davies' statement, and added that the state of the stable was very bad, owing to the high temperature. The best remedy for getting rid of the beetles was a good supply of fresh intake air.

Witness was cross-examined by Mr. Prosser, who quoted Mr. Wm. Jenkins, Ocean Coal Co., as stating before a Royal Commission that colliers could work comfortably in stalls where the temperature was 80 degrees. The temperature in the stable was 78½.

Mr. Prosser: Do you say that horses require a different standard of temperature from that of man?

Stipendiary: I do.

Evan Philip Evans, M.R.C.V.S., Consulting Veterinary Surgeon to the Home Office and the Bedwas Navigation Colliery Co., said there was a mass of flies there—hundreds of thousands of them. The chaff and corn in the mangers were black with beetles, and there was a mass of beetles crawling about in every direction, and they were thick on the walls.

Stipendiary (to Mr. Prosser): You must be enjoying this. (Laughter.)

Witness added that he had never seen a place like it during his 25 years' experience.

Cross-examined by Mr. Prosser, witness agreed that the condition of the horses was good.

Mr. Prosser: Were they eating the beetles?

Witness: I don't think they could avoid eating some.

Mr. Prosser: The beetles must be agreeing with the horses. (Laughter.)

For the defence Wilfred H. Heppell was called. He said that this particular stable was 1,500 yards from the pit bottom. Fifteen horses had been stabled there for some time, but nine latterly. At the end of September last it was decided to abandon the Red Coal district, and he gave instruction to remove the horses to other stables. When he went with the inspectors on Oct. 15th to the stable in question he was under the impression that the horses had been removed, but three remained there. Wm. Jones, manager of the colliery, gave further evidence, and said that the flies were not a source of annoyance to the horses. Lewis Thomas, day overman at the Red Coal District, said he received

instructions from Mr. Heppell and Mr. Jones to remove all the horses from the Red Coal Stable. He removed six the following day to various other stables, and left three in the old stable. The Under-Manager said that those three would be required to take material from the Red Coral District, which was then being abandoned.

Mr. Prosser then addressed the Bench, and contended that a temperature of $78\frac{1}{2}$ degrees was not too high.

The Stipendiary said that the Bench had no hesitation in saying that a very serious offence had been committed. The defendants had no excuse whatever, because they had had sufficient warning, and all the warnings had been disregarded, with the result that on the 15th Oct. the stable was still pestered with masses of flies. It was absurd to say that the horses did not suffer in consequence. One would have to enter into the skins of those horses to know how much they had really suffered. Each of the defendants would have to pay a fine of £10. Mr. L. N. Williams and Mr. F. W. Mander, who are directors of colliery companies, did not adjudicate in the case.—*The Aberdare Leader*.

Royal College of Veterinary Surgeons.

EXAMINATIONS IN LONDON.

The following passed his Final Examination :

Mr. G. S. Walker

EXAMINATIONS IN EDINBURGH.

The following passed their Final Examination :

Mr. B. Philp	Mr. J. B. Mackie
D. M. Ireland	T. D. M. Martin

The following passed their Third Examination :

Mr. R. Beattie	Mr. T. A. Shaw
E. C. Nelson	N. Bissett
J. Robertson	

The following passed his Second Examination :

Mr. J. K. Irvine

The following passed their First Examination :

Mr. D. Buchanan	Mr. A. B. Hendry
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EXAMINATIONS IN LIVERPOOL.

The following passed their Final Examination :

Mr. S. T. Jackson	Mr. B. Whittam
E. J. B. Sewell	

The following passed their Third Examination :

Mr. W. A. Berry	Mr. C. Wadsworth
E. W. Hughes	

The following passed his Second Examination :

Mr. H. V. Hughes

The following passed their First Examination :

Mr. H. R. Hewetson	Mr. A. E. Proctor
--------------------	-------------------

von Hindenburg and Veterinary Surgeons.

In September last General von Hindenburg addressed a circular letter to the Commanders of his Armies, in which he called attention to the considerable diminution of the epizootics (glanders and infectious pneumonia) which had appeared amongst the horses, and which, in the Spring, had assumed impressing gravity. He attri-

butes this diminution to the assiduous and intelligent work of the veterinary corps, which has been able to apply prophylactic measures in extremely difficult conditions. With words of encomium and gratitude, Hindenburg passes a warm eulogy upon the Army veterinary surgeons, who have performed irreproachable work at the Front in the equine hospitals, the laboratories, and the slaughter-houses, contributing laudably to the preservation of the horses of the Army. Given the value and the sacrificing spirit of the veterinary corps, Hindenburg is certain that the conditions will be well maintained in the future, notwithstanding the advance into infected territory, and notwithstanding the severe fatigue and the inevitable deficiency in alimentation to which the horses will be subjected.—(*La Clinica Veterinaria*.)

W. R. C.

Medicine made easy.

The Farmers' Gazette, Dublin, gives the following reply from a Wexford correspondent, with the comment "which we reproduce as a matter of general interest to our readers."

COMMON SALT FOR STOCK AILMENTS.

"For calves of three months old I would give a good fistful dry, and wash down with half-a-pint of warm water, and let him go about as usual, but keep him from bad water; any quantity of good water will not do harm. For a two-year-old you could give one pint dry, and treat in the same way as the calves. I have cured calves and two-year-olds just as stated, when I thought it would be impossible to effect a cure with any medicine. I may also mention that I give plenty of salt to every class of animal in the place, and have not had a case of disease since I commenced doing it. Fattening cattle do remarkably with half a fistful on each meal.

I remember well when a boy we had twenty three-year-olds fattening, and they got some disease. When vets. failed, my father commenced with the salt; he used to give one pint dry three times each day, with a large bucket of spring water, and after six days they began to eat a little, and were quite recovered in twenty-one days. Any further information required I will be pleased to give on the matter."

Scutellaria in Medicine.

Dr. William Bramwell, Liverpool, writes to the *British Medical Journal* :—

"In view of the correspondence on bromides in epilepsy it would, perhaps, be worth while to introduce to the notice of the profession the simple herb scullcap, or *Scutellaria lateriflora*, in the treatment of this disease. In many cases a simple infusion or extract in correspondingly suitable doses will lessen the severity of the fits and reduce their number equally with bromides and without any of the disadvantages of the latter. Its efficacy appears to be partly due to its stimulating the kidneys to increased activity not only in increasing the flow of water but also the output of urea and uric acid as shown by the increased specific gravity of the urine, the retention of such toxins as a cause of many cases of epilepsy being too frequently overlooked. The medicinal qualities of this simple remedy are even more marked in chorea than in epilepsy, and it is to be hoped that a similar investigation and a similar therapeutic distinction awaits scullcap as happened in the case of comfrey, the invaluable qualities of which were limited to the use of the herbalist and consequently despised by the profession until Dr. C. J. Macalister, wisely setting aside prejudice, determined to investigate it, and having discovered its cell proliferating properties proved it beyond question one of the most valuable of remedies."

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Dec. 16.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieut. to be temp. Capt.:—R. Clunas (Dec. 7).

Dec. 18.

Temp. Lieut. to be temp. Capt.:—F. K. Henton (Aug. 11).

To be temp. Lieut.:—R. J. Bushnell (Dec. 1).

Dec. 20.

To be temp. Lieut.:—F. T. Smyth (Dec. 6).

Dec. 21.

Capts. to be temp. Majors:—W. J. Dale, W. H. Simpson (Dec. 22).

Temp. Lieut. to be temp. Capts.:—P. J. Austin (Dec. 11).

To be temp. Lieuts.:—H. Quiggin (Dec. 9); W. S. Walker (Dec. 11).

Dec. 22.

Temp. Capt. to be temp. Major:—J. W. F. Brittlebank (Dec. 23).

To be temp. Lieuts.:—A. J. S. Reynolds, P. Haugh, (Dec. 12).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Dec. 18.

To be Lieut.:—H. W. Dawes (Dec. 19).

MEMORANDA.

Lieuts. of the Army Vet. Corps, S.R., to be temp. Capts. whilst serving in E. Africa:—W. W. Henderson, R. C. Wheeler (Sept. 1, 1914).

To be temp. Capt., while serving in E. Africa: A. S. Leese (from Sept. 28, 1914, to Dec. 5, 1914).

The following casualty in the Indian Forces, Mediterranean Expeditionary Force, is reported:—

WOUNDED—Dhan Bahadur, Assist. Veterinary Officer, Baharatpur Transport Corps.

Personal.

STOW—CROUCHER. On the 9th Dec., at St. Mary's, Leigh, Tonbridge, by the Rev. F. O. Walton, Lieut. R. J. Stow, A.V.C., youngest son of the late William Stow and Mrs. Wm. Stow, of Hadlow, to Eva Croucher, youngest daughter of Mr. and Mrs. Edward Croucher, Great Hayesden, Tonbridge.

OBITUARY

JOHN AITKEN, M.R.C.V.S., Dalkeith.

Graduated, Edin.: April, 1841.

Mr. Aitken passed away on Saturday, 18th inst., in his 96th year. He was a native of Easter Duddingston, and succeeded his father in practice 74 years ago; he removed to Dalkeith in 1846.

His qualification bears the earliest date in the current issue of the annual Register R.C.V.S. The position of doyen of the profession now falls to Mr. W. Emms, of Ilminster, Somerset, whose diploma dates from May, 1846.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS

Period.			Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
			Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
Gr. BRITAIN.													
Week ended December 18			10	10		1	2	2	38	100	22	61	225
Corresponding week in	1914	...	18	20	3	42	1	5	†	†	15	77	361
	1913	...	15	15	1	50	5	9	47	79	26	59	1127
	1912	...	7	10			1	1	80	183	16	45	704
Total for 51 weeks, 1915			566	633	56	693	50	87	||873	||1894	238	3913	16454
Corresponding period in	1914	...	710	775	27	166	97	286	†1530	†2642	218	4298	39078
	1913	...	575	629	2	73	155	398	2334	4558	223	2520	31687
	1912	...	729	826	83	645	171	310	2828	5965	294	2888	39230

† The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked: London 1, Stafford 1

Board of Agriculture and Fisheries, Dec. 21, 1915.

|| Figures for thirty-eight weeks only.

IRELAND.		Week ended Dec. 18		...		...		...		Outbreaks		...	
		...	...	...	...	...	...	...	...	2	11	1	2
Corresponding Week in	1914 ...	...	...	...	...	...	...	...	...	...	11	2	15
	1913 ...	...	...	...	...	...	...	...	...	1	24	1	17
	1912 ...	...	...	...	...	...	...	...	...	2	12	1	12
Total for 51 weeks, 1915		...	2	2	...	...	1	3	70	409	244	1351	
Corresponding period in	1914 ...	1	1	76	957	...	...	76	478	192	966		
	1913 ...	...	...	...	...	1	1	113	535	133	893		
	1912 ...	3	3	68	382	...	...	66	370	212	1590		

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Dec. 20, 1915

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

The purchase of Army Mules in U.S.A.

The following notes are taken from an article by 'Hotspur' in *The Daily Telegraph*, and is given here as complementary to his remarks on the horse supply in last week's issue.

"It has been stated officially that the Government have had to spend £12,000,000 in America on horses and mules to meet the vast requirements of our armies abroad. This figure history may show to be under rather than over the mark.

Since mule-breeding is not carried on in the United Kingdom, this indispensable beast of transport had to be purchased abroad; but much money expended in America would have been saved to this country had the horse supply been in a less unsatisfactory state than it was at the time the officers of the Remount Department of the War Office had to secure animals for war service. From one firm in the United States the British Remount Commission, under Major-Gen. Sir Frederick Benson, purchased 120,000 mules and 60,000 horses.

Reference is made to the Guyton and Harrington Mule Company Properties, the head-quarters of which are at Kansas City, Mr. J. D. Guyton being president, Mr. W. R. Harrington vice-president, Mr. J. F. Guyton treasurer, and Mr. W. K. Harrington secretary. The company have 500 buyers in the field, and thus it covers practically every State in the Union. Kansas City ranks second as a railroad centre in the United States, having thirty-two distinct railroad lines, while it is famous as a hay market (the most important in the States), for agricultural implements, live stock, meat packing, and grain.

The proprietors claim that it is possible to stable and feed daily 102,000 head of horses and mules. In 1914, which year was normal and ante-dating the extra demand caused by the war, 89,552 horses and mules were handled at the Kansas City Station. An additional 40,000 were handled at the company's other stations, making a total in round numbers of 130,000. The horse supply of 1914, according to the United States Government report on Jan. 1st, 1915, was 21,195,000 and the mule supply 4,479,000. The estimated horse supply for 1915 was 23,000,000, the estimated mule supply being 5,500,000. During the Boer War the Guyton and Harrington Company sold the British Government 55,023 horses. That was in 1901-2, and during the same period it sold to its regular trade 56,385 head of stock.

Some details may be given of the procedure after they have been accepted at Kansas City by the British Remount Commission. First, they are shipped to the great feeding stations and depôt at Calthorp, Missouri, about forty miles distant. There are facilities at this station for handling 250,000 head, and now the British Government is in direct charge of the station. At East St Louis, Illinois, on the road to the point of embarkation, another great sales and feeding depot is maintained, and one more night's trip brings the shipment to Nashville and Columbia, where there are two feeding stations. The last part of the journey is to the ports of embarkation, whence the purchased animals are shipped. It is claimed that the Guyton and Harrington chain of feeding stations is so perfect that it is not necessary for an animal purchased by the British Government to leave any of its properties from the time it is bought at any of the sales' stables until it reaches the port of embarkation.

Some day it will be possible to tell how shrewd calculation and much forethought on the part of the chief of British Remount Commission in America enabled our Government to deal on such an extraordinary big scale in horseflesh, and how the vast purchases were shipped to Europe and other theatres of war. The Guyton and Harrington Company may well be proud of their achievement.

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Meetings, Second Friday of Feb., June, and October

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Meetings, Second Thursday Feb., June, and October

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Meetings, Third Thursday, March, July and November

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Meetings, Last Saturday in January and August

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 Public Health Dept., City Chambers, Edinburgh

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 19 Bank Street, Hillhead, Glasgow
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 88 Crookston Street, Glasgow
Meetings, Second Wednesday, May, Oct. and January.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1434.

JANUARY 1, 1916.

VOL. XXVIII.

ARMY OPPORTUNITIES.

A little material from Army practice continues to find its way into our clinical reports, and suggests how much remains unreported. Two examples appeared in our columns last week. One was the discussion upon mange and ringworm by the Central Society, a great deal of which was based upon experience in connection with Army horses. The other was Lieut. Stokoe's article upon the treatment of the same diseases, which represented Army experience solely.

Lieut. Stokoe's article describes a treatment which appears to possess two great merits—simplicity and rapidity; and it will be more than interesting to know whether other clinicians confirm the author's claims for it. The Central Society's discussion followed more classic lines, but contained much that will repay perusal. Perhaps the most noteworthy features were the remarks upon prophylaxis, the preference shown for that time-honoured agent, sulphur, and the general recognition of the importance both of thoroughness in detail and of judgment in applying the dressing. The last point, in particular, is one which not every veterinarian, even to-day, has fully realised.

Both notes illustrate how greatly the clinical opportunities of the army veterinary surgeon just now exceed those of the civilian. Equine mange, in many civil practices, is not a very common disease, and equine ringworm is generally regarded as rather rare. But an army veterinary surgeon in war time sees a great deal of both diseases—enough, in fact, to more than equal the life-experience of many civilian practitioners. These are by no means the most important equine war diseases—we all know the part that glanders, contagious pneumonia, influenza, and strangles play in war time. Much the same can be said with regard to many sporadic affections. Laminitis, for instance, is now rarer in civil life than of old; and not a few civil practitioners have little to do with it. But, on a hard campaign, it is still and always will be common. For most branches of equine practice the army is now the best field of observation available, and will continue to be so till the end of the war.

Army experience is bound to have a tremendous effect upon civil practice when the present temporary veterinary officers and Territorials return to it. The effect might be even greater were their experience more freely communicated; but, considering how many hundreds of our members are now with the forces, the amount of such communication is still pitifully small.

DISTEMPER—ETIOLOGY AND VACCINATION.

The following is a summarised abstract of a short report upon the above subject which H. Carré, Chief of the Service of Research upon Infectious Diseases at the Alfort School, presented at the International Veterinary Congress last year.

The author commences by pointing out that the etiology of distemper is still very obscure. Only one point is incontestable, viz., the extremely contagious nature of the affection. This etiological obscurity depends upon many causes, among them being the difficulties of research and the contradictory results that are current, the absence of truly pathognomic symptoms and the resultant impossibility of clinical differentiation of the affections which may attack young dogs, the lack of information regarding the exact parts which pertain, in the symptoms and the lesions, to the virus proper of the disease and to the microbes of secondary infections, the great diversity of accidents which may appear, in very variable order, in the course of the disease, the diverse receptivity of different breeds of dogs, and the multiplicity of microbes encountered in the lesions.

The author notes the fact that Lignières, whose conclusions he quotes verbatim, has now admitted that the true specific agent of the disease appears to be the filterable virus demonstrated by Carré in 1905. Lignières has thus given up the claim of specificity for the *Pasteurella canis*, though he holds that various microbes, the *Pasteurella canis* among them, are capable, apart from the filterable virus, of producing an affection clinically similar to distemper.

Lignières, Carré, and Eugène all agree that the filterable virus is an established fact and beyond all dispute; but it is nevertheless true that precise information is still required concerning the part played by it in the causation of the various lesions observed during the course of distemper.

The author dwells at some length upon the well-known work of Ferry, who, in his judgment, has by no means established the specific nature of his *Bacillus broncho-septicus*. Various reasons, such as the harmlessness of cultures when injected subcutaneously, warrant grave doubt being cast upon this organism as being the cause of a disease which is exceedingly contagious. Carré adds that, in seven young dogs manifestly affected with distemper, he failed to find the *B. broncho-septicus*. At present, he regards this organism as a simple agent of secondary infection, and not at all as the specific germ of distemper.

In criticising the further work of Ferry, Carré points out that that author and Kregnow (a

German worker who agrees with Ferry in discrediting the view that distemper is caused by a filterable virus), express surprise at the diagnostic importance which he seems to attach to the cutaneous pustules. But Carré is not alone in attaching importance to these pustules; all French veterinarians, for a long time past, have relied greatly upon them in diagnosis. The double fact that the German and American workers have failed to demonstrate the filterable virus and have not encountered pustules suggests to Carré doubt as to whether he and they have really been studying the same disease.

Finally, Carré deals briefly with the question of vaccination. He has himself been working for some time upon this subject, but is not yet prepared to publish his results. Meanwhile, he merely intimates that he has obtained results which "deserve to be known."

The report concludes with some strong criticisms of the method of vaccinating with cultures of *B. bronchosepticus*, which does not appear to rest upon a very firm basis, and of the value of which Carré is evidently sceptical.

ABSTRACTS FROM FOREIGN JOURNALS.

THROMBOSIS OF THE ARTERIA FEMORALIS IN A HORSE.

Reichenbach, of Leipzig, has recorded this case. The subject was a chestnut gelding of Belgian breed, about seven years old, and in good condition. The owner's account was that the horse did light work at a walk well, but, when taxed severely, lameness of the right hind limb appeared, and increased so greatly with continued work that further progression became impossible.

On examination, the author found at first that the horse trotted sound. He was kept trotting for further observation; and, after about five minutes movement, a slight lameness of the right hind leg appeared. After another five minutes this had increased so much that the horse could not travel further.

The right hind limb was wholly cold. Pulsation was imperceptible in the lateral metatarsal and digital arteries of this limb; while it was strong in the same arteries of the left hind limb. The author then made a rectal examination, and palpated the vessels of the pelvic region, but could detect nothing abnormal. After the horse had rested for a quarter of an hour, he was able to work without difficulty.

The author diagnosed thrombosis of the femoral artery. Treatment with fibrolysin was decided upon, though it was regarded as no more than experimental. On another day, therefore, the author injected 10 c.c. of fibrolysin intravenously. At the same time he advised that the horse should be harnessed again after two days, and that his work should be gradually increased.

Eight days after the injection, the owner reported that, even after continuous hard work, the horse only went quite slightly lame.

The author now injected another 10 c.c. of fibro-

lysin intravenously. Two days afterwards the horse went completely sound at continuous and very severe work.—(*Berliner Tier. Woch.*)

PATHOGENIC EFFECTS OF THE BACILLUS ABORTUS UPON GUINEA-PIGS.

In 1912 Theobald Smith and Marshal Fabyan published an account of a peculiar general disease of guinea-pigs which is produced by inoculating them with Bang's abortion bacillus (*Zentralbl. f. Bakt. u.s.w.*) The disease only rarely leads to death. It resembles tuberculosis, and is characterised by chronic interstitial neoplasms, which chiefly consist of epitheloid-like and lymphoid cells. The post-mortem appearances are marked by a more or less pronounced polyadenitis. The spleen is remarkably large. The liver shows small cicatrices and minute yellowish nodules, generally isolated. The kidneys are either quite normal or severely diseased; in the latter case they are enlarged, and their cortices are beset with small grey nodules. The testicles are almost always atrophied. The lungs often contain tubercle-like growths. Often, also, there are tumour-like swellings of the bones, and an inflammation of the spinal cord with paralysis of the hind quarters. The bacilli are difficult to find in the inflamed tissues.

The bacillus abortus may be present in milk; and it is therefore worthy of enquiry whether it has any causal relationship to sclerotic lesions of the organs and tissues or other chronic diseases of man and the domestic animals. The above-described lesions of the guinea-pig have a practical importance in the examination of the post mortem appearances after inoculating this animal with milk suspected of being tuberculous.—(*Berliner Tier. Woch.*)

AUTOSEROTHERAPY IN EQUINE PLEURISY.

Ducher has reported his experience of this now well-known but still debateable method of treatment (*Rec. de Méd. Vét.*) Among the questions which have yet to be settled regarding it is the quantity of pleuritic exudate which should be re-injected. Tappaz uses 15 c.c., Mauhal and Séjournant 2.5 to 20 c.c., and Haan 40 c.c. Ducher's cases seem to indicate that a larger dose is advisable.

One horse with an old-standing exudate, treated with an injection of 20 c.c., did not survive; and the author concludes that the reason was that the dose was too small.

A second horse, with an injection of 20 c.c., recovered very slowly.

A third horse, with an injection of 60 c.c., recovered in less time.

Finally, a fourth horse, in a very bad condition at the commencement of the treatment, recovered very rapidly with an injection of 100 c.c., which the animal supported without any disturbance.

The good results of autoserotherapy are due, in a great part at least, to the formation of antibodies which it provokes. Mauhal and Séjournant think that the exudate contains a virulent culture, the toxins which it has already elaborated, anti-toxin, and the product of the neutralisation of the toxin

by means of the anti-toxin. Ducher, discussing the question of the influence of the size of the dose upon the intensity of the reaction which leads to the formation of anti-bodies and upon the rapidity of their elaboration, admits that, if the exudate contains a virulent culture, too large a dose of it would be disadvantageous. He considers, however, that in autoserotherapy either the bacilli are attenuated, or the exudate, along with them, contains products which antagonise their pathogenic effects.

As regards the amount of exudate which can be withdrawn from the chest, Ducker believes that it is possible to withdraw from 4 to 5 litres (= about 7 to 8½ pints) with impunity. (*La Clinica Veterinaria*.)

W. R. C.

ANNUAL REPORT OF THE CIVIL VETERINARY DEPARTMENT BIHAR AND ORISSA FOR THE YEAR 1915-16. [Abridged].

The Civil Veterinary Department, during the year now under review, was in charge of Mr. Pool, of the Punjab Veterinary College, from the 9th of April, 1914, to the 13th September, 1914, as I had been granted leave. For the remainder of the year it was administered by me. From the date of his handing over till the 27th October, 1914, when he was transferred to Madras as Officiating Principal of the Veterinary College, he continued to act as a Supernumerary Officer.

Altogether he spent 163 days in the Districts, and travelled 6706 miles by rail, and 678 miles by road.

Since my return from leave, touring has been continuous. The work of the Department has been very heavy this year, on account of the widespread outbreak of Rinderpest, and the absence of two senior inspectors, Babu P. N. Das and Babu B. L. Sur on sick leave, and of my inability to provide substitutes to act for them.

During the period under report I spent 166 days on tour and travelled 7213 miles by rail, and 1716 miles by road.

I regret to have again to repeat the remarks made by me in last year's report regarding the very few Bihari and Oriya students who think it worth their while to apply for stipends to enable them to carry on their studies at the Bengal Veterinary College. Although the scholarships granted by District Boards have now been increased to Rs. 13 a month, there appears to be no doubt that the real cause of our inability to obtain candidates is the low scale of pay, and the lack of prospects which are open to those who enter this branch of Government service. This opinion has been confirmed by most District Officers.

A scheme for the re-organisation of the Department was submitted to Government before I proceeded on leave, and it is understood that the local Government, after carefully considering it and consulting the local bodies concerned, are about to lay it before the Government of India.

The number of students from this province at the Bengal Veterinary College at the end of the session was 13 in the first year, seven in the second year, and six in third year class, of whom nine, five and five respectively passed at the annual examination.

The new graduates who passed their examinations at the end of March, 1915, will be admitted to the Department at the beginning of the next year.

TREATMENT OF DISEASE.

As in 1913-14, special attention has been given to the reporting of disease by the police, and marked improvement has been noticed in all districts, except three,

where the police have not yet realised the importance of this part of their duties. In Champaran, the Chaukidars failed to report rinderpest, and as a result there was a widespread and very virulent outbreak. Itinerating assistants and inspectors, as an important part of their duties, visit thanas as often as possible, and in this way keep the Epidemic Report Register up-to-date. District Officers and Superintendents of Police have helped ungrudgingly, and to them special thanks are due for the manner in which they have pushed forward inoculations, and in other ways helped the Department.

The total number of outbreaks of all diseases reported during the year was 3882. 2292 were attended.

No outbreak of scheduled contagious diseases of equines was reported during the year, but there were three outbreaks of anthrax in which five animals died. Necessary steps were taken to control them.

Rinderpest. The year under review has been one in which this disease has been prevalent with more or less virulence in all districts of the Province. In 1913-14 it was reported from a Bihar district for the first time since I took over charge of the Department, and as stated in the report for that year, it caused a large number of deaths in the Saran district, but fortunately did not spread. It was introduced by cattle which returned from the Nepal Jungles, into which they are sent each year for grazing. In October, an investigation of an outbreak of anthrax at Champaran, by Mr. Pool, led to its discovery in that part of the district. An enquiry was started, and it was then disclosed that it had been in existence for about nine months, and had caused considerable mortality in all parts of the subdivision. Active steps were immediately taken to deal with it, by drafting in assistants from other districts, while the first inspector, Babu P. N. Das, was placed in charge of the operations. In spite of severe opposition, a large number of inoculations were successfully performed, and the disease at the end of the year was well in hand.

The number of deaths from rinderpest in Champaran have been compiled from figures collected by the inspectors, the veterinary assistants, and the police; but these do not represent, in my opinion, the total mortality by nearly one-half, as during the enquiry which I made, there was hardly a villager questioned, who did not complain of his losses. Some who took cattle to the grazing grounds returned without any. The disease was particularly severe on buffaloes. I therefore think that the deaths were at least 10,000. Taking Rs. 40 as the average price of each animal that died, cattle owners in Champaran, and especially in Bettiah Sub-division, must have lost Rs. 400,000 worth of stock from this disease alone, during the short time it was prevalent.

Ten other districts have shown a high death rate; but in these districts the number of deaths appear to me to have been underestimated also. Although the total number of deaths for the whole province is given as 23,085 it appears to me that 35,000 would be nearer the correct figure. Taking this number as the actual, and Rs. 30 as the average price of each animal, the total loss to cultivators during the year in Bihar and Orissa falls not far short, in my opinion, of Rs. 1,050,000 from rinderpest alone.

Foot-and-mouth disease was not responsible for many deaths during the year, but there is still a slight increase over the figures for 1913-14.

Hæmorrhagic Septicæmia. The mortality from this disease is, this year, considerably less than that reported in 1913-14, as only 4306 deaths have been recorded against 6612. The number of deaths appear to have underestimated. It was diagnosed microscopically on three occasions.

Black quarter. Only 67 deaths were reported this year. It was confirmed by microscopical examination in four outbreaks.

Anthrax. Deaths are reported from 10 districts with mortality of 149, against 27 of the last year. It was diagnosed microscopically in 13 outbreaks.

INOCULATION.

Every effort that has been possible has been made during the year under report to increase the number of inoculations in villages which have been affected with contagious disease. Pamphlets have been widely distributed, and inspectors have personally visited many outbreaks, in order that they might use their influence with such villagers as have still refused to take up this method of preventive treatment. I regret to have to state that although disease was particularly virulent in five, and part of another, it was very difficult to get any inoculations done, owing to the intense religious prejudices of the people of these parts. In Jamui Sub-division, for example, even the personal efforts of the district magistrate and of the sub-divisional officer showed unproductive results, and practically no inoculations could be done.

The success of the "Serum Alone" method of treatment, as pointed out last year, is undoubted, provided that doses suitable to the district in which it is employed are used. For instance, in Bettiah Sub-division, the normal dose was injected at first, but it very soon became apparent that animals which did not receive double or treble doses or more were not immunised.

There has been no lack of serum or other products of the Imperial Bacteriological Laboratory, Muktesar, this year, and in part to this fact must be attributed the large number of animals which have been immunised. Altogether 130,027 cattle were protected, as compared with 121,020 of 1913-14. If the number inoculated by the Ranchi Inoculators is not taken into account, the staff of the Department have performed 85,688 inoculations, or 32,579 more than in 1913-14. Many more could have been done if a staff of reserve and staff veterinary assistants had been available; 20 extra assistants could have been given employment had they been procurable.

Rinderpest. Inoculations have been performed wherever it has been found possible to do so. The total number of cattle protected by the Departmental Staff was 68,172. Champaran was the district in which the largest number was performed, 15,584 cattle having been inoculated by the local assistants and a special staff up to the end of March. Considerable numbers have also been immunised in six other districts.

Hæmorrhagic septicæmia. 16,722 inoculations were done this year by the veterinary assistants. Of this number 10,165 were with Vaccine, and 6557 were with Serum, the figures of the previous year being 15,297 and 5392 respectively. The total decrease of 3967 was due, mainly, to the inability of the assistants to render aid, owing to their presence at other outbreaks. The total number of deaths after inoculation with vaccine and serum was seven only.

Black quarter. Twenty-six cattle only were inoculated in one outbreak. There were no deaths after inoculation.

Anthrax. Inoculations were undertaken in seven outbreaks, the total number of animals protected being 768.

ITINERANT VETERINARY ASSISTANTS.

"On the 1st April, 1914, there were 41 itinerant veterinary assistants on the roll, including those in charge of four combined appointments. During the year the number was increased to 52. Babu J. N. Mitter resigned; the services of Babu M. M. Bannerjee, veterinary assistant of Balasore, were placed at the disposal of the Agricultural Department, he having been recommended for the appointment of Veterinary Assistant in charge of the Sepaya Cattle Farm and Babu K. B. Lal of Gumla was dismissed for unsatis-

factory work, leaving thus, at the end of the year, 49 itinerant veterinary assistants.

I wish to bring to notice the good work done during the year by the following assistants:—Babus M. Agnihotri, Gopalgunge; S. C. Bose, Dhanbad; A. T. Das, Giridih; D. N. Mukerjee, Hazaribagh; S. Chakravarti, Angul; R. N. Prosad, Sewan; B. B. Chowduri, Kendrapara; R. N. Pundit, Jamui; Maulvi E. H. Khan, Gaya Sadr; Maulvi M. H. Khan, Barh.

Veterinary assistant Babu A. C. Sen of Palamau and Babu S. C. Prosad were suspended, the former for bad work, and the latter for submission of a false travelling allowance bill. Both those assistants have been placed in the reserve. The total number of new cases treated by itinerant veterinary assistants has been 53,616 as compared with 40,442 cases treated in 1913-14."

VETERINARY HOSPITALS.

"The number of hospitals was reduced from 22 to 20 during the year, as the vacancies in the hospitals at Dumraon and Hathwa could not be filled.

[Several hospitals, quarters for assistants, and a dispensary are noted as "building" or "under consideration."]

The veterinary assistants in charge of the following hospitals are commended for the work done by them during the year:—Babus C. L. Ganguly, Bankipur; N. N. Ghose, Muzaffarpur; N. M. Chatterjee, Ranchi; M. R. D. Nadam, Cuttack; R. K. Ram, Sitamarhi; K. K. Mitter, Gaya; J. L. Rose, Bhagalpur; Maulvi Md. Azam, Monghyr.

The shoeing forges with the exception of Monghyr continued to do well and show considerable profits, the total income being Rs. 5142 against an expenditure of Rs. 4062. Good nalbands are urgently required, but are very difficult to find, although attractive wages are offered.

The total number of in-patients and out-patients treated at the hospitals was 26,044 against 23,849 of the previous year."

Under the head of "Bull Rearing and Breeding Farms" it is reported:—"The Bettiah Farm is still under the control of the Civil Veterinary Department. At the end of the year the herd consisted of 37 cows, 11 bull calves above two years of age, 14 bull calves of two years of age, 3 of one year, 6 under twelve months and 2 stud bulls. Twenty-six bulls and 17 buffalo bulls have been distributed. Thirty-two calves were born during the year, out of which 21 were heifers and 11 were bull calves."

"The Government Cattle Breeding Farm, Sepaya, is not under the Veterinary Department, but is managed by a special officer directly under the Director of Agriculture. The stock in the month of April consisted of four bulls of breeding age, 50 cows, 14 heifers and 51 calves. The condition of the herd throughout the year was good.

The need of bulls in all districts of the Province where breeding on a large scale is carried on is greatly felt, but it will be a long time before anything tangible can be done, as the present breeding herds are totally inadequate in size. The plan adopted by the Bettiah Raj of confining the distribution of the bulls to the Bettiah Estate is the one most likely to give good results. It appears to me that an effort should be made to improve the cattle of Orissa by starting another cattle farm in Cuttack or Puri district, and it would be advisable during the coming year to make enquiries in those districts with a view to selecting a suitable site."

[Particulars are given of visits to the principal fairs and shows, with demonstrations of methods of treating contagious diseases.]

The report concludes with notes on the Subordinate Veterinary Establishment.

"The number of inspectors was the same as last year, viz., five only, but two additional posts, one on Rs. 130 and another on Rs. 70 were sanctioned, with effect from April, 1915.

Fifty-seven veterinary assistants were in Government service on 1st April, 1914. As 11 assistants joined the department, the total number on the roll at one period was 68, but three assistants left the department, one was dismissed and one died, so the number at the end of the year was 63, and one employed by the Bettiah Raj. This figure includes the five who were on the Reserve list on 31st March, 1915."

"The four inspectors held charge of the same circles as in previous year, whilst the first inspector, Babu P. N. Das, held a roving commission, and made special enquiries into the work of veterinary assistants whenever necessary. The most important duty on which he was employed during the year was in connection with the outbreak of rinderpest in Champaran district. As usual it was performed with energy and intelligence, and I have pleasure in again bringing his name to the favourable notice of Government, I regret to have to state that he has had to take medical leave on account of his eyesight, and that it is doubtful if he will be ever able to return to duty again.

On the whole the manner in which the inspectors and assistants have done their work this year is worthy of much praise. Both classes have responded with energy to appeals for extra work to suppress the outbreaks of contagious diseases."

RESEARCH WORK.

"Blood slides were sent on 98 occasions by the veterinary assistants for examination at the Raymond Research Laboratory. The following diseases were diagnosed:—Strangles, rabies, anthrax, hæmorrhagic septicæmia and black quarter.

Four 'Kumri' horses were sent to Muktesar for experimental purposes, at the request of the Imperial bacteriologist.

The Post-graduate training of the inspectors and the establishment of a laboratory for the diagnosis of diseases are urgently required, and will be taken up as soon as the necessary staff is available.

D. QUINLAN, M.R.C.V.S.

Superintendent, C.V.D., Bihar and Orissa.

NOTE ON A SUPPOSED SOLUBLE TOXIN, PRODUCED IN ARTIFICIAL CULTURE BY THE BACILLUS OF MALIGNANT OEDEMA, BY G. BARGER, M.A., D.Sc., AND H. H. DALE, M.D., F.R.S. From the Department of Biochemistry and Pharmacology, Medical Research Committee. [Abridged].

Some months ago we made some experiments on the nature of a toxic substance occurring in the filtrates from the cultures of the bacillus of malignant oedema, an organism which has acquired special importance during the war, as being one of the spore-bearing anaërobic bacteria concerned in the production of gas gangrene from soil-infected wounds.

Our observations were limited to the cultural filtrate from one particular strain, for the culture of which, as well as for the quantity of the reputed toxin, with which many of our experiments were made, we are indebted to Mr. J. B. Buxton, F.R.C.V.S. The strain was originally obtained from a case of gas gangrene, and its correspondence in all diagnostic points with the true bacillus of malignant oedema has been confirmed by several bacteriologists. From the muscles and areolar tissue of guinea-pigs dying of infection with an organism of this type Roux and Chamberland expressed a juice which, after sterilisation by filtration, killed other guinea-pigs with acute convulsant symptoms. Besson prepared a

similarly toxic filtrate by growing the organism on sterilised meat, which the digestive activity of the organism rapidly liquifies. The filtered juice of a five or six days culture kills medium-sized guinea-pigs with acute symptoms in a dose from 3 to 5 c.cm. given hypodermically. It is a juice of this kind which has been regarded by Besson and others as containing a characteristic toxin produced by the organism, and attempts had been made to prepare an antitoxic serum by immunising animals against it. A broth culture of the organism, however abundant the growth, will not yield a filtrate of such potency.

The material used by us was obtained by growing the organism for five or six days at 37° C. on minced ox-heart, previously sterilised in the autoclave. The culture was started in hydrogen and provision made for the escape of gases, which the culture soon produced in abundance, by a tube leading from the cultural jar into a trap filled with sulphuric acid. The semifluid evil-smelling product was filtered first through paper-pulp, and then through a Berkefeld candle. A nearly clear brown filtrate was obtained.

This filtrate produced the acute intoxication described by Besson when injected into guinea-pigs, the fatal dose for an animal weighing about 300 grams varying from 3 to 5 c.cm. with different preparations. It was at once evident, however, that the toxic constituent had none of the characteristics of a true bacterial toxin. The relatively large volume of the filtrate required for the production of general symptoms and the almost immediate onset of the symptoms when the dose was sufficient to produce them at all, suggested rather the non-specific action of some product of putrefactive digestion, and the necessity of using solid meat as a culture medium was suggestive in the same direction. The suggestion was confirmed by the observation that the toxicity of the product was but little affected by brief boiling. Dr. Walpole filtered the fluid under pressure through a collodium film, which was impervious to diphtheria toxin, and the filtrate showed the full toxicity of the preparation.

The symptoms produced are both local and general. Locally a large, oedematous, hæmorrhagic infiltration is produced in the subcutaneous tissue and underlying muscle, in a considerable area surrounding the site of injection. With a non-fatal dose this local effect may be the only one, except for a vague malaise. The general symptoms comprise tremors, weakness, and excitability, rapidly passing into extensor convulsions, which usually terminate in death within fifteen minutes of the injection. *Post-mortem* the lungs are found to be oedematous, with areas of hæmorrhagic consolidation, and the trachea contains a blood-stained froth.

The question of practical interest was the identification, among the volatile basic constituents, of the toxic principle. A few experiments showed that the ammonia fraction was entirely responsible for the symptoms produced, and that pure ammonium salts, in dose and concentration equivalent to those of the ammonium salts in the "toxin," produced all the effects described, both local and general, in perfectly characteristic manner. Young guinea-pigs showed, in proportion to their weight, the same excessive sensitiveness to the general convulsant action of ammonium salts as to those of the toxic culture filtrate. Neither the organic bases, in the proportion present, nor the fatty acids contributed materially to the effect.

There seems, then, to be no ground for supposing that the bacillus of malignant oedema, in an artificial culture of the type described, produces anything in the nature of a specific toxin. The production by it of a toxic solution from meat depends on its intense proteoclastic and desaminating action. The proteins are rapidly broken down to amino-acids, and from these the amino-groupings are then split off, yielding ammonium salts of

fatty acids, which accumulate in surprising concentration. To these must be attributed at least the greater part of the acute symptoms produced by the culture filtrate in the guinea-pig; though doubtless intermediate products of proteolysis may play some part, especially in the delayed death which sometimes follows recovery from the immediate acute symptoms.

The chief interest of the observation seems to us to be the hint it furnishes as to one of the factors favouring spread of infection with the bacillus, in the tissues of an animal in which it has once obtained a hold. It is well known that with washed spores, or even with a broth culture of this organism, it is practically impossible to produce an experimental infection. Some local tissue injury is needed to give the infection a chance of success. This may be mechanical injury, as by contusion of tissue, or irritation by soil particles; or chemical injury, as by lactic or acetic acid. Among such chemical injuries we may now, with some reason, include the effect of the toxic juice formed by the bacillus from meat, which is essentially that of a strong solution of ammonium salts. Given injured tissues in which the growth may start, it is evident that the localised production of ammonium salts will soon be sufficient to create in the neighbouring tissues conditions favouring the spread of the growth, which may then go on indefinitely.—*Brit: Med: Jnl.*

Mr. H. Chaplin, M.P., on Horse-breeding.

When recently there was presented to Parliament the report of the small Committee appointed by the Earl of Selborne, as President of the Board of Agriculture and Fisheries, the Right Hon. Henry Chaplin, M.P., appended certain reservations and a supplementary report. It must not be overlooked that no man living has done more during the last thirty or forty years for thoroughbred and light-horse breeding than Mr. Chaplin. He is a member of the Jockey Club, and as long ago as 1867 he won the Derby with *Hermit*, a horse that was destined to take a big place in shaping the history of thoroughbred horse-breeding in this country.

Mr. Chaplin and the Right Hon. Walter Long, Gen. Cowans, and Gen. Birkbeck were chiefly instrumental in urging on the Government the importance of accepting Colonel Hall Walker's splendid offer on the Government's valuation of Tully and Russley, and the gift of the breeding and racing studs in existence there.

As long ago as 1875 Mr. Chaplin moved in the House of Commons "that this House views with apprehension the large and continued export of the best and soundest stud horses and brood mares for general purposes from this country, and wishes to direct the attention of her Majesty's Government to the national importance of taking such steps as may be desirable to prevent the deterioration of the stock which remains." He then gave some details, on the authority of the German Ambassador, of the procedure in Prussia, where there were three principal breeding studs, which were originally intended for supplying the Royal stud. In addition there were eleven depots, containing about 1,450 stallions. From these depots, at the proper season of the year, the horses were distributed in numbers, varying from one to six, under the charge of Government servants, and they were located at 540 different stations throughout the country, where accommodation was usually provided for them by the landed proprietors who took an interest in the matter. The whole cost of maintaining the studs was £170,000 per annum, of which there was received back in fees £70,000, and the annual produce of those establishments was something like 50,000 foals, at a gross cost to the State of £100,000.

But the serious part of the question was that most of the horses in Germany were of English extraction, were

bred either from English horses or English mares, and one-third of the whole had been imported straight from this country. That was forty years ago. To-day the produce of English horses is being used against us. Germany and Austria have drained the countries of our best thoroughbred stock likely to produce horses for war purposes, and of a certain invaluable type of mare. But for years the Board of Agriculture has steadily refused to recommend State aid on an adequate scale. No encouragement has been given to the farmer to breed the right type, and it has been left to the War Office by its serious representations to bring about the present crisis.

In Mr. Chaplin's supplementary report he traces events from the time when he spoke in the House of Commons in 1875, to the period when he served on the Royal Commission on Horse Breeding, which ceased to exist in 1911. He touches on the various letters of complaint from the War Office to the Board of Agriculture during the last two years, and comments: "This is indeed a stupendous disclosure, a deplorable change in the character of the horse supply of the nation, and the more remarkable when, by universal consent, it is admitted that at one time, and for a vast number of years, England was famous throughout the world for its breed of horses and for the stamp and the quality of the supply which it possessed."

He points out that the United Kingdom has been drained year after year by one country after another of great numbers of our best thoroughbred country stallions and our best half-bred country mares. And he is convinced that this is the real cause of the deplorable position into which the horse supply of the country has fallen. So long as we continue to lose the best of our breeding material in such large proportions common-sense tells us it could not be otherwise.

Mr. Chaplin says, what is really needed more than anything else is a reliable census of suitable thoroughbred sires, and all thoroughbred horses in training which give promise of becoming suitable sires: "I am greatly afraid that it will be found to be short, and even dangerously small, and I suggest it should be undertaken without delay. The sole information that we have on the subject at present shows that only 205 thoroughbred stallions are registered in England and Wales. If that is all that we have it is exceedingly serious."

It is suggested, therefore, that until we have a sufficient number of stallions for our own use no license for the export of any horse should be granted. Mr. Chaplin describes as an "absolute fallacy" the idea that the foreign market for thoroughbred stallions affects the production of sires of that class in the United Kingdom. All such high-class horses are bred, with the rarest exceptions, for one purpose, and one alone—for racing. "They are bred in the hope that they may become winners of big races, classic or otherwise, in which case the dam and her future produce become the source of a fortune greater or less to the owner, and whether the foreign market for stallions of this class is lost or not, so long as racing continues they will be bred in the future exactly as they have been bred in the past, and independently of all other markets except the market which is provided for them by racing."

Here let Mr. Chaplin's two important suggestions be emphasised: "Racing being the foundation upon which the light horse-breeding industry rests, in the reconstitution of any existing central authority, or in the creation of any new one in connection with the light-horse industry, it would be an advantage if racing was represented upon it by more than one of its members; and it would also be well if British farmers, who comprise the largest number of breeders, should be represented upon it by one of their own class as well."—*The Daily Telegraph*.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab. (b)	Swine Fever.	
	Out-breaks (a)	Animals.	Out-breaks (a)	Animals.	Out-breaks (b)	Animals.	Out-breaks (b)	Animals.		Out-breaks (a)	Slaughtered. *
G. BRITAIN.											
Week ended December 25	9	9					38	57	19	81	248
Corresponding week in											
1914 ...	12	21					†	†	8	58	199
1913 ...	19	23			7	40	48	89	12	53	347
1912 ...	14	14			1	5	45	103	7	32	433
Total for 52 weeks, 1915 ...	575	642	56	693	50	87	||911	||1951	257	3994	16702
Corresponding period in											
1914 ...	722	796	27	166	97	286	†1530	†2642	226	4356	39277
1913 ...	594	652	2	73	162	438	2382	4647	235	2573	32084
1912 ...	743	840	93	645	172	315	2873	5068	301	2920	39653

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, Dec. 28, 1915

† Counties affected, animals attacked: —

|| Figures for thirty-nine weeks only.

The Swine Fever Report.

The final Report (Cd. 8045) of the Departmental Committee appointed by the Board of Agriculture to inquire into Swine Fever contains, in addition to the report of the Committee, minutes of evidence and appendix, and is published by Messrs. Wyman & Sons, Ltd., Fetter Lane, E.C., at 8d.

The following Conclusions and Recommendations indicate broadly the lines taken in the enquiry.

"After consideration of the Report on experiments carried out at their request by Sir Stewart Stockman, the Committee arrived at the following conclusions:—

(1) That the manure of pigs suffering from swine fever is infective.

(2) That a period of fourteen days may be regarded as sufficient to bring about the disinfection of infective manure through natural causes.

(3) That rats are not, as has been suggested, pathological carriers of swine fever.

(4) That all the available evidence suggests that swine fever is not disseminated by external parasites.

(5) That while persons, vehicles, and animals which have been in contact with infected pigs or premises may carry infective material mechanically within the area of their movements, subject to the time limit indicated above, the evidence leads the Committee to the conclusion that all wide dissemination of disease is due to the movement of infective pigs.

(6) That a pig may become infective in three days after it has itself contracted infection and before it has actually exhibited clinical symptoms of the disease, and a pig which has contracted the disease may continue to be infective for a variable period, the extent of which has not yet been fully ascertained, but which is often of considerable duration.

(7) That there would appear to be cases in which healthy pigs which have not been visibly affected by swine fever and which, on post-mortem examination show no evidence of having suffered from swine fever, are infective and continue to be so for a considerable time.

While the experimental investigation of this matter is very difficult and the evidence in support of the existence of carriers is largely circumstantial, the possibility that the carrier pig exists cannot be lost sight of,

especially in considering the practicability of extirpating swine fever.

Sir Stewart Stockman's report describes experiments which have been made. These experiments deal with the use of serum treatment and vaccination as methods of combating swine fever.

'The causal agent of swine fever is a living organism which is capable of reproducing itself at a rapid rate in the bodies of susceptible pigs, but no method of culturing it artificially has yet been discovered.

The organism can pass with fluid containing it through the pores of the finest bacterial filters which can be relied upon to arrest micro-organisms of ordinary size. The filtrate of the former retains its virulence, while that of the latter is no longer virulent.

The causal organism of swine fever has never been rendered visible under the microscope, the probable explanation being that it is beyond the range of microscopic visibility. Whether it belongs to the animal or vegetable kingdom cannot yet be determined.

If an immune pig which has recovered from swine fever be inoculated with a large quantity of virus, such as is contained in the blood of an affected pig, it becomes hyper-immune.

The serum of a hyper-immune pig if injected into other pigs will protect them for a short time against swine fever. Such a serum is called a protective serum, or an anti-serum.

From the experiments it appears that treatment with serum is highly effective in saving the lives of pigs which are exposed to infection immediately after serum has been injected, if they are free from infection at the time of treatment. Serum, however, has no curative effect, and the results of its use as a protective are so far disappointing in the case of young sucking pigs.

Treatment with serum alone confers only a short period of immunity, but this can be converted into a prolonged immunity if the pigs treated with serum are allowed to come in contact with infection. This may be called a natural vaccination.

'Artificial vaccination' consists in the simultaneous application of serum injection with an infection produced by the administration of virus by feeding or by inoculation. This procedure appears to be attended by greater risks of producing severe forms of swine fever than natural vaccination, and the actual inoculation of virus appears to be more dangerous than feeding with virus.'

The special procedure adopted in certain areas during 3½ years appears, in those areas, in which swine fever had previously been brought to a low ebb, to have been successful in keeping down the number of outbreaks of disease at a time when the number of outbreaks underwent a very large increase in other parts of Great Britain. The results, however, are not such as to indicate that swine fever can be eradicated by this procedure in these areas unless all pigs from other areas are excluded from them. The special procedure has been abandoned for the present.

General Conclusions.

The continued prevalence of swine fever appears to be due principally to its highly contagious character, and the difficulty of its recognition by the pig owner in its early stages and in its milder forms. To these causes must be added the difficulty of completely tracing the place of origin and the movement of pigs by which the disease has been spread. The extirpation of the disease is practicable only by such drastic measures of slaughter as would involve a prohibitive outlay, and by such severe restrictions on movement as would be fatal to the industry of pig keeping. New preventive methods may bring about a condition of affairs more favourable to the prospect of eradicating the disease, and the study of such methods is being actively pursued.

Recommendations.

In view of all the evidence laid before them the Committee recommend:—

- (1) That the attempt to extirpate the disease by general slaughter should be abandoned for the present.
- (2) That the immediate object of future policy should be—(a) To reduce mortality from the disease; (b) To control the spread of the disease.
- (3) That in order to reduce mortality, the use of protective serum without avoidable delay in infected herds should be encouraged by every possible means and in particular by facilitating the supply of serum.
- (4) That the production of immune herds by simultaneous administration of serum and virus should be undertaken where pig owners so desire, on premises selected as suitable and under careful supervision and restrictions.
- (5) That in order to control the spread of disease the isolation of infected premises should be maintained by restrictive regulations, but that such restrictions should allow of the introduction to infected premises of pigs to be treated immediately with serum.
- (6) That careful consideration should be given in the light of further experience to the extent to which existing general restrictions on movement may be relaxed as the result of new measures.
- (7) That in view of the experimental results above referred to the lapse of a short period of time may be relied upon for disinfection of premises, and should be regarded as preferable to chemical disinfection in the case of large quantities of manure and of premises not readily capable of being disinfected by artificial means.

While the Committee submit the above recommendations based on the present state of knowledge, they are strongly impressed by the possibility of artificial vaccination as a method of combating swine fever. They also recognise the advantages that might accrue from the discovery of a reliable diagnostic test for obscure cases, and they therefore recommend that investigation into this and cognate matters should be actively continued. In conclusion, the Committee wish again to record their appreciation of the zeal and ability displayed by Mr. P. S. Lawrie in the discharge of his duties as Secretary

of the Committee, and to express to him their thanks for the valuable assistance which he has rendered.

G. L. COURTHOPE, *Chairman*. M. LOCKE BLAKE.
CHARLES E. LONGMORE. CHARLES DOUGLAS.
LUKE WHITE. FRANK W. GARNETT.
STEWART STOCKMAN. *JOHN PENBERTHY.
A. W. ANSTRUTHER.

*Professor Penberthy's signature is subject to the following reservation:—"I am unable to subscribe to paragraph 3 (2), as I do not consider the experiments on which it is based are conclusive. I think it is highly desirable that further experimentation on the point should be undertaken and its result well considered before any period is accepted as the basis of administrative measures."

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donations are reported:—

Messrs. J. & H. Sumner, Liverpool	£5 5 0
North of Ireland Veterinary Medical Assoc.	5 5 0
Previously reported	69 16 0
Total	£80 6 0

At a meeting of the Council of the Clydesdale Horse Society, held on Wednesday afternoon, Dec. 22, it was reported that at the meeting of the joint-committee of the Glasgow Agricultural Society and of this society, Mr. Andrew Robb, M.R.C.V.S., Glasgow, had been appointed chief inspector and umpire, with Professor John R. McCall reserve; that the Glasgow Agricultural Society had nominated Mr. W. F. Houston, M.R.C.V.S., Paisley, as one of the examiners, and the Council now nominated as the other examiner Mr. W. G. Forbes, M.R.C.V.S., Kilmarnock, with Mr. James Lindsay, M.R.C.V.S., Dumfries, as reserve.

Mr. Andrew Robb, F.R.C.V.S., veterinary surgeon; Mr. Wm. Robb, F.R.C.V.S., and Professor John R. McCall, M.R.C.V.S., deputy veterinary surgeons, were appointed at the annual general meeting of the Glasgow Agricultural Society.

OBITUARY

E. P. JENKINS, M.R.C.V.S., Castle Hotel, Llandilo.
Graduated, Glas: June, 1899.
Mr. Jenkins died on December 23rd, aged 41.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Dec. 23.

REGULAR FORCES. ARMY VETERINARY CORPS.

The appointment of the following temp. Cpts. is antedated as follows:—T. W. J. Gardiner to Oct. 7, 1914; R. W. Simpson to Oct. 13, 1914.
The Christian names of temp. Lieut. Alfred Edmund Davies Froggatt are as now described, and not as stated in *Gazette* of Jan 5.

Dec. 28.

To be temp. Lieut.:—L. G. Gryspeerdt (Dec. 11).

Dec. 29.

To be temp. Lieut.:—R. Hayes (Dec. 15).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.
Dec. 28.

To be Lieut.—G. T. E. Anderson (Dec. 29).

The following casualties in the Mediterranean Expeditionary Force, are reported :—

DIED—Pte. S. P. Lock, 46, Lowland Dvl. Mobile Vet. Section (T.F.)
Pte. W. Davey, 4204.

The following casualty in the Balkan Expeditionary Force is reported :—

DIED—Pte. H. H. S. Trinder, 10125.

OBITUARY

SIMPSON.—On the 27th December, at "Bonnie Brae," St. Ives Road, Maidenhead, Emily Mary, beloved wife of James F. Simpson, F.R.C.V.S., aged 67. Interred at Maidenhead Cemetery, December 30th.

Magnesium Chloride as Cytophylactic.

Last September Delbet and Karajanopoulo reported to the Académie de Médecine the results of their most recent researches into the influence of magnesium chloride in stimulating phagocytosis. From observations *in vitro* they found that the action of a solution of 12.1 per 1,000 of anhydrous magnesium chloride in stimulating phagocytosis was 75 per cent. greater than that of a solution of sodium chloride (8 per 1,000), which itself caused 63 per cent. more than Ringer's solution, and 154 per cent. more than isotonic sea water. They next ascertained that this cytophylactic action of magnesium chloride was to be observed when an intravenous injection was made during life. Their first experiment consisted in injecting 150 c.cm. of the 12.1 per 1,000 solution into the saphenous vein of a dog weighing 16 kilograms. On comparing the phagocytic action of the blood taken before and thirty-five minutes after the injection they found that in the first specimen 500 polynuclear corpuscles took up 245 microbes, and in the second 681, an increase of 180 per cent. They then by a rather elaborate experiment, details of which were not explained, ascertained that an even more marked result occurred when the phagocytosis took place in the circulating blood itself; the increase in the case of the *Bacillus coli* was 333 per cent., and in the case of the *Bacillus pyocyaneus* and cocci 129 per cent. The injections did not produce any toxic symptoms, but they had not made them in man, although they had used the solution of magnesium chloride for dressings and subcutaneously with good results.

At the meeting of the Académie on November 23rd M. Pinard reported very favourably on the use of a solution of magnesium chloride in the treatment of wounds; owing to the difficulty of obtaining the anhydrous salt he had used the crystallized salt in corresponding proportion, which was calculated to be 17.5 per 1,000. The solution actually used was made by dissolving 18 grams of crystallized magnesium chloride in 1,000 grams of sterilised water. In treating the wounded from the battle of the Marne Pinard had used antiseptics, but after October 12th 1915, he had entirely abandoned their use, and all the wounded from the Champagne actions were treated solely with the magnesium chloride solution. All the cases when received had infected wounds, which were suppurating freely. The wounds were irrigated with the solution and covered with a thin layer of sterilised absorbent wool impregnated with the solution. All cases which were

suppurating, or which presented anfractuous wounds of the muscles or bones, were dressed during the first five days twice a day, after that once a day. No drains were used, and any counter openings considered necessary to afford free exit to the pus were small. The results, Pinard stated, were such as he had never before witnessed. Alike in wounds of muscles and those which involved bones, suppuration diminished very rapidly and the foul odour progressively grew less. Amputation wounds did extremely well; the epidermis extended from the edges with astonishing rapidity, as the neck of a bag is drawn in by a string, and in no case was it necessary to cauterise exuberant granulations. The stumps in some of the cases in which the amputations had been performed on September 25th, 26th, and 27th, were completely cicatrized on November 23rd, but in a few there was a small fistulous opening leading down to the bone; in such cases the wound was irrigated with the solution every day, and the amount of excretion diminished daily. In wounds involving bones suppuration diminished rapidly, and the exposed bone either became detached in small fragments, each irrigation bringing away particles, or the bone became red and covered with granulations. If all the intricacies of the wound were thoroughly irrigated, the offensive odour of the discharge disappeared generally in a few days and callus formed rapidly. "When I compare," Pinard said, "the results I obtained with the wounded from the battle of the Marne, which I treated with antiseptics, with those I have recently obtained with the wounded from the battle in Champagne treated with the solution of magnesium chloride, the conviction that a great advance has been achieved is forced upon me.—*Brit. Med. Jour.*"

Glandular Partial Hermaphroditism.

Dr. Blair Bell has had an opportunity of studying a case in which a patient commenced life and passed publicly as a normal woman, menstruating regularly for eighteen months. The catamenia then ceased, and masculine characteristics developed. At the age of 19 the voice had become deep, a small moustache had developed, and the distribution of hair on the surface of the body was noted to be of the masculine type. An exploratory operation was performed. The right genital gland proved to be a small normal ovary, not in a highly active condition. The left genital gland was a true ovotestis. The naked-eye appearances were instructive, the gland on section showing a pale cortex presenting all the appearances of an ovary, and a dark medullary portion. On microscopic examination the cortical part was seen to be made up of true ovarian tissue, with normal Graafian follicles; the more central portion was testicular tissue, made up of seminiferous tubules and testicular interstitial cells. No spermatogenesis was seen. Dr. Blair Bell classifies this case under the head of "glandular partial hermaphroditism." Total hermaphroditism—the power of self-fertilization or at least of fertilizing others and of being fertilized—is limited to invertebrates. Partial hermaphroditism, on the other hand, is known to exist in man. As judged by the strict standard of histological investigation, all the recorded cases except one of glandular partial hermaphroditism have been found to possess mixed gonads or ovo-testes with or without irregularities in the sex characterization of the genital ducts, external genitalia, and secondary characteristics. Dr. Blair Bell agrees with Pick and Tuffier and Lapointe in holding that all cases reported and accepted as "true hermaphroditism" should be called "glandular partial hermaphrodites." The ovotestis has been detected in ungulates, moles, and other mammals, as well as in man.—*B. M. J.*

Dried Yeast as Food for Farm Stock.

Dr. Crowther contributed an article to the Journal of the Board of Agriculture on tests of dried yeast for stock feeding. He gives the following summary of experience with the food throughout the past winter:—

1. Dried yeast has proved a safe food for cows, pigs, and calves.

2. For cows, dried yeast is not to be strongly recommended, since they show a special aversion to its bitter taste.

3. It has proved a good food for pigs, having given results markedly better than those obtained with an equal weight of wheat "sharps." Despite the increased cost of the ration on introducing dried yeast in the place of an equal weight of "sharps," the margin of profit on the feeding has been undoubtedly increased.

4. Dried yeast has proved a safe food for calves, but no evidence has been obtained as to its merits in comparison with other food stuffs commonly used for calf-rearing.

5. Dried yeast keeps well, and on mixing with other meals and water may be kept for some time without objectionable fermentation taking place.

6. In arriving at these conclusions no account has been taken of the value imparted to the manurial excreta of the animals by the consumption of dried yeast. From its composition this may be expected to be as high as that of any other foodstuff commonly used on the farm.

7. Although the experience with dried yeast at Garforth, as outlined above, has been favourable, there is no reason to believe, either from the results of experiments or from careful observation of the general health of the animals throughout the tests, that the dried yeast possesses special medicinal or dietetic virtues which any other highly digestible food rich in albumenoids might not be expected to possess.

Chenopodium in Uncinariasis.

Bishop and Brosius of Panama City (*Journ. Amer. Med. Assoc.*, November 6th, 1915) have continued Levy's researches, which showed that oil of chenopodium, a proved vermifuge, was not dangerous as a drug. It was prepared from the fruit of *Chenopodium ambrosioides*, and it was long known as a remedy for ascariades. The authors administered oil of chenopodium to 108 patients suffering from hook-worm disease, of whom 92 took no other drug, while the remainder were treated alternately with thymol alone and with chenopodium, or with a chenopodium-thymol mixture alternated with pure thymol. In one instance 1379 hook-worms were expelled in a first whole stool. The patients were in many instances very ill already, but the deaths that occurred were, in all cases, clearly due to other causes than the chenopodium. A treatment consists of 48 minims, often repeated at intervals of three days, without any of the prostration and weakness not rarely occasioned by thymol. The oil was put up in capsules of eight minims, and the authors gave two capsules to the dose, including three doses to the treatment, given two hours apart. Each treatment was followed in four hours by two ounces of castor-oil. Bishop and Brosius found that the method of administration of chenopodium was simple; that the drug could be given at shorter intervals than when thymol was used; that it caused far less pain and discomfort than thymol; and, in short, that it was a more efficient vermifuge in the treatment of uncinariasis.

Stomoxys Calcitrans as a carrier of the virus of Poliomyelitis.

The following is from a letter to the Editor of *The Lancet*, by J. C. T. Nash, of Norwich.

"My personal observations when inquiring into cases of poliomyelitis occurring in Norfolk afford strong additional evidence in support of the theory that infection is conveyed by stomoxys calcitrans. I have found this fly in numbers in the houses in which the cases occurred in every instance which I have personally investigated, and stables, cowsheds, or bullock sheds have always been noted in the immediate neighbourhood. The most recent case I have inquired into affords additional weighty evidence, such as I have sought hitherto without success.

On receipt of a notification of poliomyelitis in the Freebridge Lynn rural district in Norfolk I asked Mr. C. S. Woodward, the district medical officer of health, to be so good as to secure specimens of the flies in the house, *especially those seen at the window*, and to note whether stables or cowsheds were near. Mr. Woodward sent me several specimens which proved to be chiefly stomoxys, and in answering in the affirmative my question as to cowsheds, etc., gave the additional suggestive information that in a cowshed about 100 yards distant a beast had recently died of *an obscure disease with paralytic symptoms which the veterinary surgeon called in was unable to account for.** The child who was later notified as suffering from poliomyelitis had been "bitten" by flies. The beast had been disposed of, so further investigation was out of the question, but I venture to think that the evidence available is strongly corroborative of the view that stomoxys is the carrier of poliomyelitis infection. This might explain the high comparative incidence of the disease in rural as compared with urban areas.

* These italics are ours.—Ed. V.R.

THE TREATMENT OF SURGICAL CONDITIONS IN ARMY HORSES.

I believe there is at the present time more veterinary work in some of the camps in this country than the resident Veterinary Officers are able satisfactorily to cope with, and some "surgical" conditions require extensive operative treatment to which the Veterinary Officers cannot devote the necessary time.

Undoubtedly many excellent and experienced practitioners have responded to their country's call, but it cannot be denied that the majority of recent recruits of the A.V.C. are men who have qualified during the last few years. To those of us who have been in the profession for say ten to twenty years it is common knowledge that greater success in the more serious surgical cases has been attained after years of experience.

We have in the profession men from 40 to 60 years of age who may justly be considered to possess more than average surgical skill, but who cannot give up their practices to take commissions in the A.V.C. Many of these if approached would undertake surgical work in the more valuable horses provided the patients were stabled in the district. One veterinary surgeon could—if he were assisted by useful men as dressers—undertake the treatment of forty or fifty patients.—Yours faithfully,

PRACTITIONER.

Original articles and reports should be written on oneside of the paper only and authenticated by the names and addresses of writers, not necessarily for publication.

Communications for the Editors to be addressed
20 Fulham Road, London, S.W.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1435.

JANUARY 8, 1916.

VOL. XXVIII.

SCHEDULED DISEASE IN 1915.

Last week the Board of Agriculture completed the returns of contagious disease for 1915, and, on the whole, the results of the year's work are satisfactory.

Foot-and-mouth disease is a rather disappointing item. For the first nine months of 1915 we were free from it; but there has since been a distinctly serious visitation, of which it is not yet certain that we have seen the end. The outbreak was quickly brought under control; and, as many previous outbreaks have done, it illustrated at the same time both our ability to deal with such visitations whenever they occur, and our powerlessness to prevent their occurrence.

Anthrax has fallen substantially this year, and is now lower than it ever has been since the present Anthrax Order came in. Sheep scab, on the other hand, shows a slight increase upon both 1914 and 1913, contrasting with its previous record of steady decline under the present regulations. Possibly war conditions account for the rise, which is too slight to be disturbing.

We seem now to be making good progress against parasitic mange. The Order was in force practically for the first seven months of 1914 and the last nine months of 1915; and the outbreaks in the two periods numbered respectively 1530 and 911. Various factors render it difficult to judge these figures; but they seem satisfactory, especially as the returns have declined in the later part of 1915.

Swine fever has decreased slightly from 1914, but still remains higher than it was for a good many years before that. Our methods of dealing with this disease are likely soon to be radically altered; and no one will deny the necessity for it. All the measures we have taken against swine fever so far have been anything but satisfactory.

We are making splendid progress against glanders. There were exactly 50 outbreaks in 1915—rather less than one per week—against 97 in 1914. This is a great advance; but it becomes greater still when we remember that in 1909—only six years ago—we had 533 outbreaks. This progress has only been possible through the rational use of mallein as a Government test which the present Glanders Order introduced: and this procedure will enable us speedily to eliminate glanders from civilian horses, and to deal with any that afterwards comes to us from the army as a result of the war.

ACTINOBACILLOSIS.

In our issue of Nov. 20 we reprinted from a medical paper a note on the investigation in the pathological laboratory of the Local Government Board on 50 imported tongues—from Argentina, North America and Siberia—and 44 fresh specimens from animals in this country: and a "Preliminary report on the Pathology of Bovine Actinomycosis" has been published. The note passed without comment in this country; but it brought us from Canada a copy of the Bulletin on the subject, issued in March, 1904, by the Animals branch of their Department of Agriculture, then under the direction of Dr. J. G. Rutherford. Apparently little has been added to our knowledge of the disease since that time, and we have reprinted the greater portion of the bulletin and some of the illustrations.

One would have thought that with an effective veterinary department at the Board of Agriculture, such an investigation—if necessary—would have fallen to be made by their officers in the first place.

The note that we reprinted states that "the biological properties of the organisms have yet to be studied," and that "transmission from animals to man has not yet been established."

TUBERCULOSIS OF THE MYOCARDIUM IN A CALF.

Balson records the following post-mortem observation upon a calf two months old, which was affected with generalised tuberculosis (*Rec. de Méd. Vét.*) Ordinary tuberculous lesions were found in the bronchial, mediastinal, prescapular, and hepatic lymphatic glands, and in the parenchyma of the spleen. The parenchyma of the lungs, liver, and kidneys showed no lesions. The exterior of the heart showed, at the point and in the thickness of the wall of the left ventricle, an elevated whitish spot resembling a degenerated parasitic lesion. Section of the myocardium brought to light a second lesion analogous to the first.

These were really homogenous tubercles, sarcomatous in aspect, and intimately connected with the muscular fibres, among which yellowish tracts of caseo-calcareous degeneration were irregularly disseminated. Microscopic examination revealed the presence of acid-fast bacilli.

A guinea-pig was inoculated with a trituration from these lesions. Three weeks later the animal showed a characteristic ulceration at the point of injection, involving the corresponding inguinal gland. A month later the guinea-pig was destroyed; tubercle bacilli were demonstrated in the pus of the ulcer, and classic tuberculous lesions

were found in the mesenteric glands and in the liver. The other parenchymatous organs showed no lesions. The case was therefore one of a tuberculous lesion of the myocardium, which resembled a parasitic lesion.—(*La Clinica Veterinaria*).

SUDDEN DEATH AFTER AMPUTATION OF THE UDDER.

Johann, of Bütow, has recorded this case with a view to discovering whether similar ones have been observed.

The subject was a young cow, one half of whose udder Johann amputated. After the operation the cow stood up, and appeared vigorous. Johann had her placed in a stall, and went into the house to clean his instrument. After doing this he returned to the stall for a final look at the animal before leaving the place, and found her dead.

The ligatures had held, and no bleeding had taken place. The only factor which occurred to Johann as the cause of death was an aspiration of air through a gaping vein. No post-mortem examination was made.—(*Berliner Tier. Woch.*)

COCCIDIOSIS IN CATTLE AND CARABAOS.

C. H. Schultz has published this article (*Journal Infec. Dis.*, 1915, July, Vol. 17, No. 1, pp. 95-108).

In carrying out rinderpest investigations the author encountered a number of "irregular cases" which eventually proved to be cases of coccidiosis, or, as the author prefers to call it, coccidian gastro-enteritis.

Great emphasis is laid on the difficulty of differentiating coccidiosis from rinderpest, and in the paper the information regarding the two diseases is somewhat curiously intermixed.

The author states that in one case of coccidiosis which showed lesions at the post-mortem identical with those of rinderpest, "young forms of the schizogonous type could be found in countless numbers in scrapings from the ulcerated abomasum" and the whole of the intestinal tract.

He also states that by careful laking and centrifugation of blood taken from an animal recovering from a severe attack of coccidian dysentery spores can be obtained in appreciable numbers. It is said that coccidia can be found more easily in the urine than in the faeces, and that in the urine they appear under the immersion lens as "dense small coccoid bodies," the larger forms "being apparently held back by the kidneys."

"When spores are first liberated they are quite large, about one-half the size of an erythrocyte. As the spores become more developed, they show a denser capsule and become smaller."

The author states that from his "own observations in rinderpest experiments it would appear, in view of the peculiar methods by which coccidia can be divided in most minute organisms (Zublein, 1908), that one part of their life-cycle is passed in the blood-vascular system, and that their rapid multiplication in most minute forms produces the hæmolytic form of the disease. This is superseded, if the host lives, by the diarrheal form, the latter being necessary to re-infect other hosts and to transfer the contagion from one place to another."

"We cannot deny that acute coccidiosis has invariably resulted from rinderpest inoculations. Our last cases (3694 and 3714) died from coccidian gastro-enteritis of the most severe type after receiving a subcutaneous injection of 5 c.c. of rinderpest blood. Since we have been able to recognise coccidiosis, we have never found a case of rinderpest without the presence of these organisms in great numbers."

"Of four guinea-pigs that were inoculated with blood from spore-bearing cattle, two died (about seven weeks later) from coccidian dysentery, one died from pneumonia, and one is still alive and doing well."

"A good illustration of nature's methods of producing immunity against protozoa is found in our Southern States, where cattle, inoculated by ticks with piro-plasmosis for generations, have acquired a very high resistance."—(*Trop. Vet. Bulletin*).

W. R. C.

ACTINOBACILLOSIS.

By CHAS. H. HIGGINS, B.S., D.V.S.

(Bulletin of the Animals Branch, Dept. of Agriculture, Dominion of Canada). Abridged.

The possibility of this disease existing in Canada was first mentioned by the Veterinary Director General of the Department of Agriculture, Dr. J. G. Rutherford, in his annual report of 1902. The confirmation of this suspicion was made by the writer in an official report dated June 23, 1903, and since that time three other identified cases have been studied and have also furnished the data upon which this Bulletin is based.

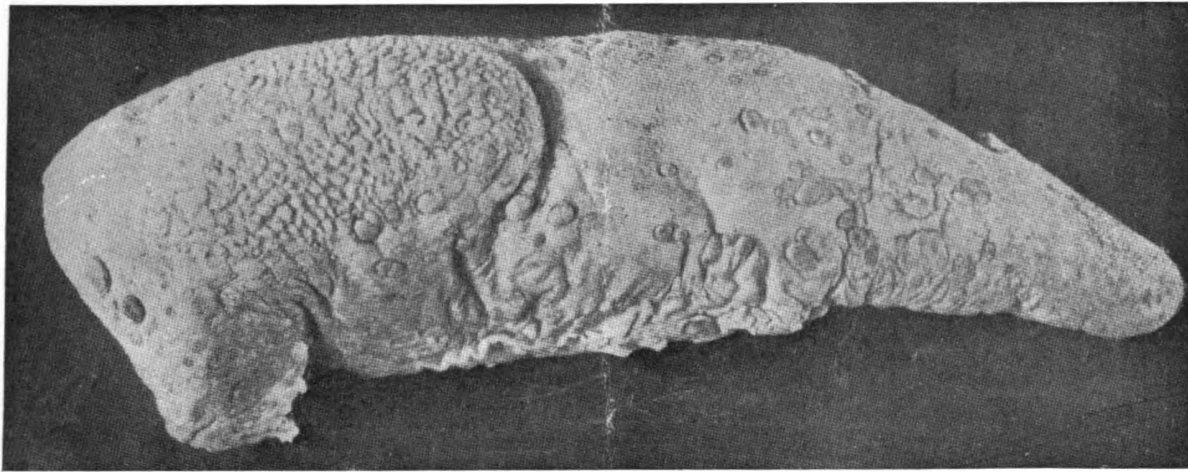
The non-identification of this disease in the past has been due to the fact that little or no original work has been conducted in Canada on the infectious diseases of animals, and when such work has been accomplished the greatest difficulties have been encountered.

This disease bears a similarity to the disease known as "Actinomycosis" or "Lumpy Jaw"; in fact a study of its anatomical manifestations and pathological lesions would lead the uninitiated to believe they were dealing with that classic affection. Until 1900-01, the two diseases were considered identical, no effort had been made to differentiate between them until it was shown by Lignières and Spitz that two distinct diseases were being treated under the one name, "Actinomycosis." Their work was exhaustive and indicated that beside the streptothrix causing the classic Actinomycosis, a bacillus, having none of the characteristics of a dichotomous streptothrix was responsible for lesions exhibiting the same general character as are found in Actinomycosis, with the exception of their micro-chemical reactions. From its bacillary causative agent they named it "Actinobacillosis" (ray-forming bacillus).

Nocard, in 1902, identified this affection in France, and showed also that its distribution was general in that country.

The disease studied by us is identical with that studied by Lignières and Spitz in the Argentine Republic, and M. Nocard in France, with the exception that the bacillus isolated from our cases has not in any instance shown the degree of virulence credited to that isolated by the investigators mentioned, hence we may safely assume that in the cases studied, we have been dealing with an attenuated form of the disease.

The history of the four cases identified by us is very brief and will be given in as full a manner as the data accompanying the material forwarded allows.



ACTINOBACILLOSIS OF THE TONGUE.



FIG. 1.

Fig. 1. A tuft from fresh pus of case 1. Coverslip preparation stained by the method of Lignières and Spitz. Highly magnified (x 1500 diameters).



FIG. 2.

Fig. 2. Bacilli of Actinobacillosis. Coverslip preparation from a culture on whole egg media. Stained with carbol-fuchsin. Highly magnified (x 1000 diameters).

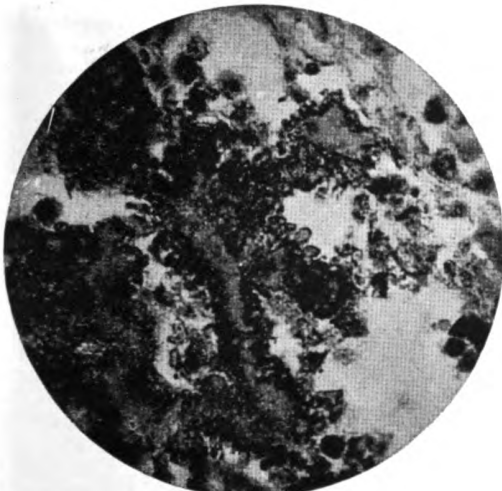


FIG. 1

Fig. 1. Section from the tumour mass of case I., cut in paraffin, and stained by the method of Lignières and Spitz. Highly magnified (x 1000 diameters).



FIG. 2

Fig. 2. Section of tumour from case IV. Section cut in gum on a freezing microtome. Stained by the method of Gram, but not fully discoloured. Highly magnified (x 1000 diameters).

Case I. An aged grade cow. Suffered considerably in fall of 1901 and spring of 1902. After being allowed to run to pasture for a time and delivered of her calf she seemed to make good recovery. This year (1903) the symptoms returned in a more aggravated form and the animal was destroyed. The affected portion, consisting of the pharynx, larynx and the upper part of the trachea, including the oesophagus and tumour mass, was forwarded to the laboratory.

The material on arrival was looked upon as a tumour of non-infectious character and was immediately placed in a solution of formaldehyde until the pressure of routine work would allow its examination, which was a few days later. On section the characteristic semi-fluid glue-like pus was revealed which is almost diagnostic. It was only at this time that the exact nature of the affection was suspected and this too late to obtain positive results from animal inoculation on account of the time the material had remained in the preserving fluid. Microscopic preparations of the pus revealed the peculiar clubs, and no portion of the smear preparation retained the colouring matter when treated by the method of Gram. Sections of the tumour cut in paraffin exhibited the same micro-chemical characteristics.

Case II. A pure bred Shorthorn bull. Examined by the local veterinarian in May, he had what was diagnosed as a small abscess in the left parotid gland. Potassium iodide was prescribed and continued for a long period, nevertheless, the abscess increased in size, the animal continued losing flesh, and breathed with some difficulty, due to the pressure on the larynx of the tumour mass. Later another abscess appeared on the hip near the tail. Owing to the condition of the animal and the progress the disease was making he was destroyed.

The material forwarded to the laboratory in this instance consisted of pus, taken at the time of opening the abscess in the region of the parotid gland. Laboratory animals (guinea-pigs and rabbits) were immediately inoculated. The first animal to succumb to the effects of the inoculation was a guinea-pig, death occurring on the nineteenth day after intra-peritoneal injection of the pus. At the autopsy this animal exhibited the characteristic lesions of the disease, from which the bacillus was obtained in pure cultures.

Case III. The veterinarian was called to see the animal and owing to the extremely emaciated condition of the subject she was destroyed. It was noted that the tongue was not normal, in consequence of which it was removed and forwarded to the laboratory.

Arriving in fresh condition animal inoculations were made subcutaneously, the first succumbing to the effects of the disease at the end of twenty-six days. The lesions at the autopsy were characteristic of the disease, and the bacillus was obtained from them in pure culture.

Case IV. A growth appeared on the jaw of an animal which was being fattened for beef. This growth was supposed to have resulted from the kick of a horse. A portion of the mass was forwarded to the laboratory for examination.

On microscopical examination the lesions of Actinobacillosis were found, there being no filaments, and no portion of the material retained the colouring matter when treated by the method of Gram.

Lesions. The gross lesions seen in an infected animal are very similar to those of Actinomycosis, consisting principally of a fibrous tissue hyperplasia. In many instances the lesions can only be differentiated from those of Actinomycosis by their reaction to the various colouring matters used in preparing the material for microscopic examination, particularly to the method of Gram, decolorizing when treated with alcohol. The pus is characteristic, of a semi-solid consistency, glutinous, almost transparent and containing whitish gran-

ules which are scarcely visible to the naked eye. These granules when examined under the microscope exhibit "bizarre" forms, which under high magnification show the peculiar bulb-like processes radiating from the mass. Owing to the glutinous nature of the pus it is with difficulty drawn into the ordinary laboratory pipettes, which must be of large calibre. If successfully drawn into them, greater difficulty is experienced in removing it in the process of making cover-slip preparations, cultures or animal inoculations.

Cultural Characteristics. Cultures are obtained direct from the pus with some difficulty, it being first necessary to crush the granular masses. It has been our practice to crush these particles against the side of the test-tube, using a heavy platinum wire for the purpose.

Morphology. The bacillus causing Actinobacillosis resembles in a marked degree the bacillus of Fowl Cholera. It is aerobic, facultative anaerobic, non-motile and in sizes varies, usually being 1.0-1.8 μ long and 0.4-0.6 μ broad. A distinct polar arrangement of the protoplasm is noted in the hanging drop preparation. It stains with the ordinary aniline dyes, particularly those which are acidulated; but does not retain the colouring matter when treated by the method of Gram.

Cultures in beef broth show a slight colouring of the medium in twenty-four hours at 37° C. This cloudiness increases and after some days a slight sediment is noted. No scum has appeared on the surface of the medium. The addition of glycerine, up to five per cent, does not influence the growth.

Only occasionally has it been possible to obtain any growth in gelatin, and even this has been very slight, appearing as very fine points, visible only on magnification. These points may appear deep in the medium, along the line of stab or near the surface. No liquefaction of this medium has been observed.

Upon agar, small translucent colonies of one millimetre in diameter are noted at the end of twenty-four hours. The edges of these colonies are granular. In stab cultures growth is observed in the depth of the medium as well as on the surface. Colonies deep in the medium along the line of stab are finely granular and do not extend into the surrounding medium.

No formation of gas has been noted in saccharose, glucose or lactose broth. There is a clouding of these media.

Milk to which litmus and lactose have been added exhibits no change in reaction, nor is there a coagulation of the medium. This medium furnishes conditions favourable to the development of this organism.

In liquid serum a flocculent growth is observed in from twenty-four to forty-eight hours, which falls to the bottom of the tube. No general turbidity of this medium is observed.

Upon alkaline potato a slight growth is noted after four days, appearing as small white colonies on the medium. Potatoes which are acid present no growth even after prolonged incubation.

It was with egg media that the greater portion of our investigations with this disease were carried out, and it was the only medium used in the isolation of the bacillus. In the process of isolating the germ from the affected tissue of an experimental animal, the precautions noted by Theodore Smith for the isolation of the tubercle bacillus were observed. A portion of the tissue taken under such precautions are placed in the tube, partially crushed with a heavy platinum wire and smeared over the surface of the medium. A growth may appear in three days, but was in some instances not observed previous to eighteen days' incubation at 37° C. The first colonies appear as very small white dots raised from the surrounding medium, and in growing, form a mass which has the appearance of half a sphere, never

attaining a diameter greater than two millimeters after prolonged incubation. If these first colonies are touched with the platinum wire, they are found to be rather hard and firmly adherent to the underlying medium, but if a smear preparation is made, the characteristic bacilli are found. If streaks on the medium are made from these first colonies, either in the same tube or transfers, observation after twenty-four hours reveals many small colonies, none exceeding one millimetre in diameter. After prolonged incubation the colonies grow very little larger, but become more numerous, gradually filling the intervening space, and finally form a white streak on the medium.

A trace of indol is present in old broth cultures.

Serum of experimental animals affected with Actinobacillosis causes a clumping of the bacilli in the hanging drop preparation, while that of other animals not infected causes no agglutination reaction.

The bacillus is destroyed in ten minutes at 62° C. Growths are obtained only at incubator temperature (37° C.), but may occasionally be obtained in a very slight degree at room temperature (20° C.). Tissue kept frozen for seven days, during which time the temperature ranged from - 0° F. to - 20° F., proved fatal to guinea-pigs on subcutaneous inoculation, in 25, 28 and 45 days respectively.

ANIMAL INOCULATIONS.

Guinea-pigs. Guinea-pigs inoculated intra-peritoneally with pure cultures of pus die in from nineteen to thirty-one days of a generalised actinobacillosis. We have been unable to produce death in a shorter period with a general peritonitis, which fact indicates, as already stated, that we are dealing with an attenuated virus.

The lesions presented at the autopsy are characteristic and very interesting, being entirely different from those observed, the result of other infective agents. Small pearly-white nodules appear just beneath the peritoneal and pleural membranes, varying from 1.0 to 5.0 mm. in diameter. The liver presents lesions throughout its substance, its surface being mottled. The spleen shows, usually, a varying number of nodules. The great mesenteric fold of the omentum has in every instance been the seat of extensive lesions, and in some cases has a thickness of one and one-half centimetres and a length of eight centimetres. The kidneys present nodules beneath their serous covering, but none have been observed in the substance of the organ. The diaphragm may contain numerous nodules beneath its serous surfaces. The stomach and intestines usually present nodules on their serous surfaces, varying from 1.0 mm. to 0.5 cm. in diameter. Ulcers are usually present on the mucous surface of the stomach varying in size from 3.0 to 5.0 mm. in diameter. Ulcers were also noted in the intestine, particularly in the cæcum and large intestine. The lungs present greater or less involvement of their structure; in some instances there being a few superficial nodules, while in others the lesions are general throughout the tissue of these organs. Serous fluid has been present in both the thoracic and abdominal cavities, but it is not constantly found in either. Nodules have been observed on the surface of the heart and in the pericardial membrane. An excessive amount of fluid may or may not be present in the pericardial sac. No lesions of the endocardium have been observed. At the point where the needle enters the peritoneal cavity there is always an extensive nodular manifestation in the abdominal wall beneath the peritoneum. The various lymph glands are usually enlarged, and present lesions.

Subcutaneous inoculation is usually followed by the same general lesions above mentioned. There is usually an abscess formed at the point of inoculation, and the lymph glands in the immediate neighbourhood are

greatly enlarged. There may be no generalised infection where this method of inoculation is practised, death being due to toxic poisoning. This method of inoculation requires a somewhat longer period to result fatally, usually being from twenty-five to thirty-eight days.

Rabbits. Rabbits inoculated intra-peritoneally, present lesions very similar to those seen in guinea-pigs. There is a generalised actinobacillosis, in which the thoracic and abdominal viscera are involved to a greater or less extent. There is usually ulceration of the intestinal tract, more particularly of the cæcum and large intestine. In one instance this was very extensive. The serous membranes of the thoracic abdominal cavity are extensively involved. The pericardial membrane contains nodules. Inoculated intra-peritoneally with either pure cultures or pus, rabbits die from it in from fifty-one to seventy days. In one instance one hundred cubic centimetres of fluid was contained in the abdominal cavity, and in this fluid the characteristic tuft formation was demonstrated on microscopic examination.

We have not studied the virulence of this germ for other animals at this laboratory.

Microscopic examination. The microscopic examination of the pus and tissues from animals affected with Actinobacillosis requires special technique to differentiate their various characteristics. The best results are obtained by the use of eosin and methylene blue, and the method described by Lignières and Spitz has given excellent results with both the smear preparations from pus and paraffin sections of affected tissue. The methods of Gram and Wiegert also give good microscopic preparations. A saturated solution of eosin may be used, followed by Unna's alkaline methylene blue. Good microscopic preparations of the pus may be obtained by the use of Romanowsky's stain as modified by Dutton and Todd. (Liverpool School of Tropical Medicine, 1902).

Sol. A. Medical methylene blue (Hoechst)	grms. .5
Saturated sol. of chemically pure borax	c.c. 0.5
Incub. 4 days at 37° C. then add abs. alcohol	c.c. 50.0
Sol. B. Eosin, Extra B.A. crystals (Hoechst)	grms. 25.0
Distilled water	c.c. 50.0
Absolute alcohol	c.c. 50.0

For use dilute with water, one part of stain to nineteen parts of water. Mix equal parts of diluted stain in a flask and pour immediately into a staining dish. Stain three to six minutes. Wash quickly but thoroughly in tap water and dry in the air without the aid of heat.

In fresh pus the tufts are not easily distinguished, but when squeezed between the slide and coverglass are clearly visible, even to the naked eye. They are of a whitish-grey colour, and may be more easily examined if a little picro-carmin glycerine is placed at the edge of the coverslip, as the tufts stain yellow with picric acid and the rest of the field will assume a reddish tinge.

Lesions in the various organs and tissues exhibit the same general characters as are exhibited by the tufts in the pus. The peculiar bulb-like processes are seen to extend toward the surrounding tissue, similarly as is the case in actinomycosis. Immediately surrounding the mass of the lesion is an inflammatory area, its extent depending upon the nature of the lesion.

Actinobacillosis is an infectious disease, capable of communication by direct inoculation. We are not prepared at the present time to indicate the degree of danger through co-habitation, but from the nature of infective agent we believe that this danger is perhaps slightly greater than is the case with actinomycosis. We have not found in any of the material indication of grains.

Treatment. We have conducted no experiments with this end in view, but we have the results of other workers, who indicate treatment consisting prin-

cipally in the administration of large doses of potassium-iodide. This treatment, while beneficial, will have no ultimate results unless prescribed early in the manifestation of the affection, from the fact that in the majority of cases the lesions are located in the region of the larynx, and from the extensive tumour formation respiration is seriously interfered with. If the disease process has extended too far the condition of the animal is such as to make treatment an unprofitable investment, for we have beside the actual lesions, the toxin poisoning to deal with.

THE POSOLOGY OF ANTITOXINS.

The following notes, from the pages of *The Medical Officer*, directly apply to the treatment of Diphtheria in the human subject, but much of the information is applicable in other directions, and the whole question has interest for many of our practitioners. They have interest, too, in showing that even in the States, where sentiment plays a large part, the beneficent results gained by the use of vivisection are not only retained but enforced by State legislation.

THE ADMINISTRATION OF DIPHTHERIA ANTITOXIN FOR CURATIVE PURPOSES, by WILLIAM H. PARK, M.D., Director, Research Laboratories, New York City Department of Health.

The amount of toxin present in any case of diphtheria is comparative small. Probably 100 units of antitoxin would be sufficient to neutralise the amount of toxin in the most severe and malignant cases ever met with. If we gave antitoxin, as many suppose, simply in sufficient amounts to neutralise the poison which we believed to be present, doses would be limited to from 50 to 100 units. As a fact, we give many multiples of this because only a little of the antitoxin injected is quickly brought into direct contact with the toxin. It must first enter the blood stream and then, very gradually, and in small amount, pass through the capillary walls and so at last come in contact with the toxin in the tissues. The larger the concentration of antitoxin in the blood the more rapid will be its passage from the vessels to the tissues. The combined endeavour of the clinical observer and the laboratory worker is to find the suitable amount and the method of injection which will cause a sufficient concentration of antitoxin to be absorbed into the blood from any given dose at any period of time. We can also determine the amount which passes out to the tissue fluids. The clinical observer on his side can note the changes which take place as he watches the progress of cases after different methods of antitoxin treatment.

It is only recently that the great importance of the method of administering the antitoxin has been appreciated. When given subcutaneously, the swelling caused by its injection rapidly disappears, but the antitoxin remains behind in the tissues and is only gradually absorbed in the blood. By testing many patients, it has been found that it takes in some cases a day for even the major part of the antitoxin to be absorbed by the blood from the tissues. The greatest accumulation of antitoxin in the blood is on the third day after a subcutaneous injection. Through the use of the Schick test, it has been determined that an injection of antitoxin given intravenously passes out to the tissues about ten times as rapidly as when the dose is given subcutaneously and subsequently absorbed. Intramuscular injections are more rapidly absorbed than subcutaneous. A unit thus gives most effect when given intravenously and least when given subcutaneously.

Another matter which is of importance is the size of the individual treated. It is self-evident that, if a child weighing twenty pounds is injected with 10,000 units, it would, on the average, have in its blood five

times as much antitoxin per cubic centimetre as a person who weighs 100 pounds and receives the same amount. The influence of weight on the dose is, however, largely neutralised by the fact that diphtheria in the child is generally more dangerous than in the adult. Every minute of delay in the neutralisation of the toxin in a severe case is of importance, but in a mild case there is time and it makes less difference. Infants and children are especially liable to laryngeal diphtheria, so that every case in a child presents a certain gravity which in the adult may not be present.

The last point to be considered is as to whether a single or a multiple dose should be given. It must be realised that antitoxin has no effect whatever on injury which has already taken place. If the toxin is firmly united with the cell substance, antitoxin is no longer of any service. It is the early and sufficient dose which is important. When we give a divided dose, we get the effect of the first portion only, during the interval before the giving of the second dose. If the first dose was insufficient, we lose the effect of the part reserved for the second dose. When the first dose has been of a sufficient size, the second and third injections, though harmless, are absolutely useless. The holding back of a part of the first dose so as to give it later, simply delays its action to a time when it cannot have much, if any, effect.

For the last three years we have used at the Willard Parker Hospital, and for shorter periods in other places, only a single dose of antitoxin, which, in mild cases, has been given subcutaneously; in moderate cases, subcutaneously or intramuscularly; and in very severe cases, intravenously or intravenously and intramuscularly.

The intravenous injection of antitoxin should not be undertaken by the inexperienced.

Dr. Hermann M. Biggs, Health Commissioner for the State of New York, has been pointing out that the use of antitoxin has reduced the diphtheria death-rate in New York State from 99 per 100,000 in 1894 to 20 per 100,000 in 1914. In pre-antitoxin days one person in every three who caught diphtheria died of it. To-day, of cases which receive antitoxin after the fourth day of the disease about one in twelve is fatal, against one in fifty in cases treated with antitoxin on the first or second day.

EVOLUTIONARY ETIOLOGICAL FACTORS IN DISEASE.

The following, which occurs in the Correspondence columns of *The Lancet*, enunciates a view which has been held for years past by some of us. The modification of B. Anthracis by environment has been known to some veterinary pathologists for years past. One attractive hypothesis in connection is that B. Tuberculosis is originally a vegetable parasite, and takes on its pathogenicity only by passage through the bodies of herbivora—mainly bovines, but extending even to the caprine species.

I can at once enunciate my view by stating that I do attack the thesis that a bacterium of pathogenic properties is of so constant and specific a character that it is not subject to the forces of evolution or retrogression. Indeed, within a comparatively short time, from the human point of view, such an organism under unusual environment may become innocuous or its pathogenicity may be altered so that it becomes an essential factor in the causation of some other infective process, whether labelled or not by some other specific name of disease. It is, I submit, unthinkable that a special germ has been created for each form of infectious disease. Surely

pathogenic bacteria must have evolved from saprophytes.

How far down the scale of evolution of organic life from (pristine incandescent) inorganic matter bacteria came into existence who can tell? Charlton Bastian's experiments appear to indicate that they are among primeval forms of life. In any case they are, perhaps, the most primitive forms of life known to us, and then only recognisable as "individuals" through the aid of powerful magnification.

Germ plasm and soma plasm are apparently undifferentiated in bacteria, and their vegetative multiplication is staggering in its intensity up to uncountable numbers, the multiplication of individual bacteria in favourable environment being equivalent in the course of an astronomical day of 24 hours to the multiplication of at least 50 generations of men. In other words, a day in the life of the bacillus in favourable circumstances is as a thousand years in the history of man. On further consideration from an evolutionary point of view, it is really equivalent to a much greater epoch of time, since the germ plasm of the bacillus is fully exposed to environmental influences, and is thus, in a far greater degree than animal tissues, capable of evolving and transmitting inborn traits from acquired variations. It has been experimentally proved that the anthrax bacillus (which is as specific a bacillus as can be named) can be so altered by environment in a few days that it loses its power of spore formation, and its pathogenicity is considerably modified by simply incubating a culture of the bacillus at 42° C. Dr. Roux, director of the Pasteur Institute, reported in April, 1914, that Madame Victor Henri succeeded in his laboratory in converting anthrax bacilli into new microbes as different from normal anthrax microbes as the latter are from diphtheria bacilli, and capable of communicating a *new* disease to guinea-pigs. This change was effected by subjecting cultures of anthrax bacilli to the prolonged action of ultra-violet rays.

I wonder whether his very extensive clinical experience has ever led ——— to conceive as a possibility that there may be a subtle relationship between diphtheria and scarlet fever which could be explained on the supposition that the diphtheria bacillus and the still uncertain organism, which specifiers would claim as the scarlet fever germ, might be descendants from a common ancestral organism. The frequency with which so-called Hoffmann's bacillus is found in swabbings from the throats of both scarlet fever patients and of diphtheria patients is certainly suggestive from the bacteriological point of view. Outside hospital practice one meets with very puzzling forms of mild infective disease which may be looked upon as "sports," and which are probably due as much to retrogression as to true evolution in the causal germ responsible, or in the reactive phenomena of the body tissues. How it is possible to regard the numerous strains of bacilli coli, together with Gaertner's bacillus, the typhoid bacillus, the paratyphoid bacillus, *et hoc genus omne*, as separate creations. There is no difficulty in understanding them as evolved from a common ancestral organism.

Nosology is convenient, but not always strictly accurate. Disease is recognised by the reactive phenomena of the body invaded by pathogenic germs. (The symptoms may be caused by the coincident stimulation of more than one variety of germ). Erysipelas is generally the result of body reactions against a streptococcus, which some think they can differentiate as a specific streptococcus, but even in so recent a publication as *The Lancet* of August 7th, Professor F. C. Madden, of Cairo, relates a case of spreading cellulitis where "we were hardly prepared to find that the culture [from the pus] showed an almost pure growth of staphylococcus aureus."

I have already trespassed on your space. Further

reasons from a bacteriological point of view may be found, if desired, in my little book on "Evolution and Disease," which will be amplified should it reach a second edition. Suffice it to say, that in my view when once a saprophyte has evolved into a pathogenic bacterium its perpetuation as a disease producer of constant character, such as, say, typical scarlet fever or typical diphtheria, depends chiefly on the constancy of the environmental conditions. Our knowledge even of the best-known pathogenic bacteria, such as the diphtheria bacillus with its already extensive literature, is by no means exhaustive. The key to a more comprehensive knowledge of its origin will be found in a clearer appreciation of evolutionary etiological factors in disease.

Norwich, Aug. 28.

J. T. C. NASH,
County Medical Officer for Norfolk

ANTHRAX CONVEYED BY INFECTED SHAVING BRUSHES
By REGINALD R. ELWORTHY, M.D. LOND., M.R.C.P. LOND., D.P.H. CAMB., Pathologist of the West London Hospital. [Abridged].

The patient was 32 years of age. June 29th: In the evening he noticed what he considered to be a boil coming on the front of his neck. 30th: He woke up to find considerable swelling of his neck. His medical attendant noted a high temperature and much oedema of the neck, but no "pustule" formation. July 1st: He was admitted to the West London Hospital.

There was a small yellow patch of subcuticular necrosis over the most prominent part of his thyroid cartilage in the middle line, with about half a dozen vesicles lying on its margin, and extensive oedema limited above by the lower jaw, spreading over the clavicle, and fading gradually towards the middle line behind. The mass was tender on manipulation and non-crepitant. Temperature, 99° F.; pulse-rate, 120.

After a general anaesthetic at 7 p.m., the patient became conscious but remained profoundly collapsed throughout the night, sweating profusely and becoming gradually more cyanosed. The temperature was subnormal, and the pulse-rate 150 and over. Death occurred at 7.30 a.m. on July 2nd, the total duration of illness being 60 hours. No bacteriological examination was made during life.

At the post-mortem examination held six and a half hours later it was seen that the oedema had made considerable headway, extending from the lower face above to the xiphisternal notch below.

Positive cultures possessing the cultural and biological characteristics of *B. anthracis* were obtained from the spleen, lungs, liver, stomach, and upper intestine, and oedema fluid from the neck, mediastinum, and pleura, but not from the bronchial mucus. There was no urine to examine. Control anaerobic cultures from the neck, blood, and spleen showed no bacterial growth. It was concluded that the bacillus had entered the blood stream through the skin of the neck, as no appearance of a primary lesion in the intestines or the lungs could be discovered.

Clinically this was an example of so-called "erysipilatoid" anthrax, which is characterised by the insignificance or deferred appearance of "pustule" formation, rapidly spreading oedema, and a high mortality. It is usually seen in the neck or eyelids where the tissue is loose and cellular. The oedematous infiltration may be marked without death ensuing. There is an example recorded in the Annual Report of the Chief Inspector of Factories for 1908, in which a fletcher, who had extensive oedema of the face, upper extremities, trunk, and right thigh, recovered after the use of 90 c.c. of Sclavo's serum in 20 c.c. doses.

An early diagnosis was rendered difficult partly on account of the type assumed by a disease which is rarely

seen in most London hospitals, but chiefly because the man's occupation was one of the last to suggest anthrax. The odds were as much against his having cellulitis of the neck due to *B. anthracis* as they would have been in favour of this had he been a brushmaker or hide salter.

The point of immediate interest was in what manner infection came about. With this object in view, and bearing in mind the protean nature of anthrax purveyance, some of the patient's relatives were rigorously questioned, but with so little success at first that it seemed that this case would have to be relegated to the unsatisfactory group of unproven etiology, were it not for an observation made at the post-mortem examination. At that examination it was noted that the small local lesion came well within this individual's shaving area, which covered a larger ground than usual. This suggested the idea that a new shaving brush might have laid a charge which the subsequent passage of a razor exploded. The relatives of the patient were therefore asked to follow up this clue, with the result that another member of the family, the actual purchaser and donor of the shaving brush, stated that her son had certainly used the brush she had bought during the fortnight it had been in his possession, but only a few times, as he had not altogether discarded his old one.

At the subsequent inquest a verdict was brought in that death was due to anthracæmia, possibly contracted from shaving with an infected brush. At this inquiry expert veterinary opinion was opposed to this provisional suggestion. It was held that vegetable fibre rather than animal was usually employed in the making of these cheaper brushes, and that infection from them was therefore improbable. But the three facts—viz., the site of the lesion, the use of a new shaving brush, and the absence of any other discoverable source of infection, together with the one possibility, viz., the fibre used in that new brush might be of animal origin and infected—were sufficient to suggest a working hypothesis which later investigation proved conclusively.

Fortunately the brush had not been washed after the last time of shaving. It was of poor quality (wholesale price 6d.). The fibre used was animal with a small leaven of vegetable. The former moiety appeared to be made up of hair of various kinds, some being artificially dyed to resemble badger. After comparison with known samples, it was concluded that pig bristles, horse hair, and possibly cow tail were present. The main point, however, was that animal hair was present in abundance.

As regards the examination of the hair, it was thought that if a wash made from all of them was inoculated into an animal death might ensue from some infection that would mask anthrax. It was also thought that the infection might be limited to one variety of hair in particular. Therefore, about a third of the fibre was removed from the handle. This freed portion, after a prolonged scrutiny, was divided up according to the varieties of hair it was thought were present—i.e., from pig, horse, or cow—were separated into groups, and the unrecognised remainder treated as a separate batch. These hairs, as arranged, were then examined (a) singly by heating in broth at 90° C. for 30 seconds and laying in parallel rows on surface agar, and (b) in groups by washing in broth and plating the centrifuged deposit after heating. These preliminary experiments were fruitless.

Later the rest of the brush was "lathered" in a stone mortar in imitation of the ordinary process occurring in shaving with 20 to 25 c.c. of sterile broth rendered definitely alkaline to phenol-phthalein with 5 per cent. sodium hydrate. The collected washings, after heating at 80° C. for 15 minutes, were divided into three portions. One of these was stored for further work if necessary. The second was centrifuged and the deposit

collected in 1 c.c. of the supernatant broth. This was thoroughly shaken and distributed in decreasing amounts through three agar plates. Among the many colonies which occurred on these plates three proved to be *B. anthracis* on subculture and inoculation. The deposit from the remaining third was injected into a young rabbit weighing 1000 grammes. This animal died three days later from typical anthrax: the organism grown from the animal's blood was subcultured and inoculated into a guinea-pig with similar results.

Five unused brushes, together with the one bought and used by the patient comprised a lot of six from the same manufacturer exposed for sale in a druggist's shop. They were dealt with in the same way, i.e., by "lathering" in alkaline broth. The washings were invariably very dirty. Great care was exercised in rinsing and sterilising each mortar before treating another brush, as it was thought that otherwise infection might easily be carried through a series of brushes.

Brushes.	Result of inoculation into guinea-pig.
Original	<i>B. anthracis</i> .
No. 2	Negative.
" 3	<i>B. anthracis</i> ; also <i>B. perfringens</i> .
" 4	<i>B. anthracis</i> ; also <i>B. malignant oedema</i> .
" 5	<i>B. anthracis</i> .
" 6	<i>B. anthracis</i> .
" 1A	<i>B. anthracis</i> ; also <i>B. perfringens</i> .
" 2A	<i>B. anthracis</i> .
" 3A	<i>B. anthracis</i> ; also <i>B. perfringens</i> .

The foregoing list of results obtained from the examination of two batches of brushes—the first six being those obtained from the druggist's shop—shows the widespread distribution of the spores and how gross the infection was on certain of the brushes.

The animals inoculated survived periods varying from 30 hours to 5 days. Those that died soon—viz., those inoculated from brushes 3 and 4, and 1A and 3A—did not show the characteristic post-mortem appearances of anthrax, but there was no difficulty in obtaining the bacillus by culture from the blood and spleen.

The following observation, though very insufficiently worked out, may be mentioned as throwing perhaps a little light on hair infection. About 30 pediculi found in a guinea-pig dead from anthrax were planted out on to the surface of agar plates, without any preliminary heating to destroy other organisms. Two gave rise to colonies of anthrax, which appeared first about the anal regions of the pediculi. (Of these two colonies, one was confirmed by inoculation and the other identified by culture only).

OBITUARY

ROY HERBERT CHARLES LUCAS, Lt. A.V.C. (attd. R.F.A.)
Graduated, Lond.: Dec. 22, 1914.

Lieut. Lucas died on Christmas Day, in his billet in France, in his sleep, owing to an escape of gas. He leaves a young widow.

W. J. WILLIAMS, M.R.C.V.S., Abergavenny.
Graduated, Lond.: March, 1881.

Mr. Williams died on December 3rd, aged 57.

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donation is reported:—

Mr. R. A. Thrall, Croydon	£1 1 0
Previously reported	80 6 0
Total	£81 7 0

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders† (including Farcy)		Parasitic Mange.		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Out-breaks.	Slaugh-tered. *
IRELAND. Week ended Dec. 26	...	...	...	...	...	...	Outbreaks 1		3	3	10
Corresponding Week in {	1914 ...	...	...	...	...	...	...	...	6	1	1
	1913 ...	...	...	...	...	...	...	...	22	...	...
	1912 ...	...	...	...	...	...	...	...	3	...	16
Total for 52 weeks, 1915	2	2	...	...	1	3	72		412	247	1361
Corresponding period in {	1914 ...	1	76	957	...	...	76	484	193	967	
	1913 ...	...	...	...	1	1	113	557	133	893	
	1912 ...	3	68	382	...	...	66	373	212	1706	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Dec. 27, 1915
 NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

ARMY VETERINARY SERVICE.

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Dec. 30.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieut. to be temp. Capt.:—A. E. D. Froggatt (Dec. 17).

To be temp. Lieuts.:—T. I. Alexander (Dec. 15); R. Hopps (Dec. 17).

Jan. 1.

To be temp. Lieut.:—F. R. Staples (Dec. 15).

Jan. 3.

Temp. Lieut. to be temp. Capt.:—T. W. W. Hindle (Dec. 21).

To be temp. Lieut.:—J. Connor (Dec. 20).

Jan. 5.

Temp. Lieut. W. J. S. Foley relinquishes his commn. (Dec. 23).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Jan. 1.

To be Lieut.:—J. Baxter (Jan. 2).

Jan. 3.

Lieut. J. Crooks resigns commission (Jan. 4).

To be Lieut.:—W. W. Scales (Jan. 4).

Jan. 5.

To be Lieut.:—N. A. McG. MacEwan (Jan. 6).

MENTIONED IN DESPATCHES.

REGULAR FORCE.

Gen. Sir J. D. P. French, Field-Marshal Commanding-in-Chief the British Army in France, in a despatch dated Nov. 30, mentions the following "names of those whom I recommend for gallant and distinguished service in the field":—

Col. (temp. Brig.-Gen.) J. Moore, C.B., F.R.C.V.S.; Maj. H. E. Gibbs; Maj. (temp. Lt.-Col.) R. H. Holmes, F.R.C.V.S.; Maj. H. Kirby; Maj. J. A. B. McGowan; Maj. K. McL. McKenzie; Maj. H. S. Mosley; Maj. J. S. Nimmo; Maj. A. Olver, F.R.C.V.S.; Maj. F. C. O'Rourke, F.R.C.V.S.; Maj. E. J. Wadley; temp. Maj. A. S. Head, F.R.C.V.S. (Capt., Res. of Off.); Capt. E. Hearne; Capt. (temp. Maj.) A. B. Mattinson, F.R.C.V.S. (s.r.); temp. Capt. C. W. Makinson; Lt. J. G. T. Edwards (s.r.); temp. Capt. W. B. De Vine; temp. Qmr. and hon. Lt. J. Fisher; temp. Qmr. and hon. Lt. J. F. Ives; temp. Qmr. and hon. Lt. W. H. Mawdsley. Sgt.-Maj. F. H. Young, 91; Farr. Staff-Sgt. R. Woolley, 177; Staff-Sgt. C. H. Barrow, SR/32 (s.r.); Staff-Sgt. H. Carrigan, 303; Staff-Sgt. G. Langley, 579; Staff-

Sergt. J. G. Robertson, 447; Staff-Sgt. R. W. Vane, 516; Staff-Sgt. P. J. Wellings, SR/31 (s.r.); Sgt. C. V. D. Hay, SE/7805; Sgt. W. Knowler, SE/886; Sgt. F. Nelson, SE/8060; Sgt. C. Roberts, 444.

TERRITORIAL FORCE.

Maj. E. M. Perry, F.R.C.V.S.; Capt. (temp. Maj.) J. Abson, F.R.C.V.S.; Capt. C. Hartley, F.R.C.V.S.; Lt. T. Bagshaw; Sgt. D. B. Douglas, 3, Northumbn. Div.; Cpl. F. Lucas, SM/83, S. Mid. Div.; Lee-Cpl. C. Taylor, SM/56, S. Mid. Div.; Shg.-Smith A. Webb, 10, S. Mid. Div.

CANADIAN A.V.C.

Capt. T. C. Evans; Sgt. O. C. White, 48506.

INDIAN A.V.C.

Sgt.-Maj. R. Ford, 7265.

The following casualties in the Expeditionary Force are reported:—

DIED—Pte. W. G. Standen, SE/6904.

Lieut. R. H. C. Lucas, attached R.F.A.

The following casualty in the Mediterranean Expeditionary Force is reported:—

DIED—Pte. W. Davey, 4204, Australian A.V.C.

The A.V.C. Comforts Fund.

Dear Sir,—I have pleasure in again sending you lists of subscriptions received and contributions of woollen comforts, as kindly sent me for our A.V.C. men on active service. Also I enclose some extracts from letters from Officers of Veterinary Hospitals and mobile sections showing their appreciation of gifts which have been supplied from this Fund. It will be most gratifying to those who have contributed so generously to know that the comforts are so much appreciated.

May I take this opportunity to ask all those who are interested in the Fund to forward to me with as little delay as possible any gifts either of money or comforts, as I am now despatching large consignments, in response to lists sent me, of things urgently required, and I am anxious not to deplete the amount in credit to the Fund to too great an extent—I feel that we must keep a small reserve for any future contingencies which may arise.

I hope all those kind friends who have supported my efforts so heartily will accept again my thanks for their help.—Yours truly,

ADELAIDE M. MOORE.

Strathyre, Parsifal Road,
Hampstead, N.W.

List of Contributions received to Jan. 5th :—

	£	s.	d.
Mr. R. C. Trigger	1	1	0
Mr. George Bushman, Islington	1	1	0
Lieut.-Col. G. A. Oliver (per Lieut.-Col. Stratton, Edinburgh)	2	0	0
Mrs. Bainbridge (per Mrs. Moscrop)	10	0	0
Per Mrs. Fowler, Bedford	1	0	0
W. V. Allan, Esq., Windsor	1	1	0
W. Jackson Young, Esq., Edinburgh	1	0	0
Mrs. Hodgkins	10	0	0
Capt. Routledge (per Col. Rutherford)	13	1	0
per Dr. Bradley (the Manager and staff Distillers Co., Ltd., S. Queensferry)	2	0	0
Dr. Bradley, Edinburgh (Special Entertainment)	10	0	0
Capt. F. B. Sneyd, A.V.C.	1	0	0
Lieut. R. F. Wall, A.V.C., T., per Mr. H. A. MacCormack	5	0	0
Mrs. Lenox Conyngham	10	0	0
Major Edmund J. Lawson, Dublin	1	1	0
per Mr. George Howlett	10	6	
From No. 6 Vet. Hos., Whist Drive, Sergeants' Mess	1	10	6
per Mrs. Bolton, Miss Edwards, Neath	10	6	
	£43	6	6
Mrs. Barber (Brewood): Mufflers, helmets, mittens, socks			
per Mrs. Shipley (Gt. Yarmouth):—			
Miss P. S. Shipley: Mittens. Miss E. E. Shipley: Socks. Mrs. Wilkinson: Socks, mittens. Miss Harrison: Socks. Mrs. Ward: Socks. Mrs. Pyman: Socks.			
per Mrs. Bolton (from Mrs. Callingham): Mufflers, mittens, helmets.			
Mrs. Howard (Balham): Mufflers.			
Mrs. Welborn: Socks.			
Mrs. Sargent (Bexhill): Mufflers, socks.			
Miss Fairholme: Gloves. Mrs. Kay Lees: Socks.			
Mrs. Pounceby: Muffler.			
Mrs. Fearnside: Socks, mittens.			
Mrs. Bennett: Mufflers.			
Mr. Fred Bullock (Highbury): Mittens, socks.			
Miss Hinxman: Mufflers, belts, cuffs, mittens.			
Mrs. Barcham (Norwich): Mufflers, mittens.			
Miss Record (Blackheath): Mufflers, socks.			
Mrs. O'Rourke: Gloves, mittens.			
Mrs. Mosley: Scarves, helmets, socks, gloves, mittens.			
Mrs. Quinlan: Shirts.			
Mrs. Leckie: Shirts, socks, helmets, mittens, scarves.			
Mrs. W. C. Barling (Gloucester): Shirts.			
Mrs. Manuel: Mufflers, mittens.			
Mrs. Garnett: Mufflers, helmets, cuffs, socks, mittens.			
Miss Harper: Shirts, cardigan, mufflers, socks, books.			
Mrs. Fearnside: 6 parcels, each containing 1 pr. mittens, tobacco, cigarettes, chocolates, boot laces, papers and socks.			
Mrs. Walker: Gloves, helmets.			
Mrs. Pounceby and Mrs. Charlton: Mufflers, mittens.			
per Dr. Charnock Bradley (Edinburgh): Socks, mufflers, mittens.			
The Misses Campey: Mufflers, mittens, books, magazines.			
Mrs. Swan: Socks.			
per Mrs. Shipley: Mittens, mufflers, helmet, socks.			
Miss Bartlett: Body belts, socks.			
Mrs. Thurston (sen.): Mittens, mufflers.			
Mrs. Johnson: Socks.			
Miss P. Shipley: Mittens, cuffs.			
Miss M. Moore, Miss Clogg: Mufflers.			
Mrs. E. H. Scott: Socks, mittens.			

Miss MacGregor: Mufflers, socks, mittens.
 Mrs. Barber (Brewood): Mufflers, helmets, mittens.
 Mrs. Hodgson: Mufflers.
 Miss Edwards: Mufflers, mittens.
 Mrs. Temple: Scarves, helmets.
 Mrs. Nuthall: Mittens, socks, mufflers.
 Mrs. Crafer: Scarves.
 Mrs. Frank Thornton: Helmets, scarves, handkerchiefs, mittens, cuffs, mufflers.
 Mr. F. W. Cox (Derby): Cuffs, mufflers, socks.
 per Miss Queripel (from Mr. J. H. Bennett, Romford), and per Mr. P. Perkins (Hastings), parcel of warm clothing.
 Miss C. Harper and Mr. Chas. Morgan: Shirts, cardigan, mufflers, socks, scrap book and book.
 Mrs. Bernard Blomfield and Miss Vincent: Pants, cardigans, sweaters, mufflers, mittens.
 Mrs. Crawford and Mrs. Callingham: Helmets.
 per Mrs. Garnett (from Mrs. Bowlan): Socks, mittens, mufflers, magazines.
 Mrs. Pritchard: Mufflers, helmets, socks, mittens.
 Mrs. Charlton and Miss Joyce: Mittens.
 Mrs. Walsh: Mrs. Howard: Mufflers.
 Mrs. Hamilton: Mufflers, socks, mittens.
 Mrs. Shipley: Mittens, helmets.
 Miss Bevis: Mufflers, belts, mittens, handkerchiefs.
 Mrs. Dunlop Martin: Shirts, helmets, mufflers, mittens.
 Mr. D. W. Hewson: Socks, magazines, box of shaving and toilet necessities.
 Mrs. Porteous: Tobacco, cigarettes, books.
 Mrs. Haywood: Mufflers, helmets, gloves, mittens.
 Anon.: Mittens and socks.
 Mrs. Burke Savage: Socks. Mrs. Rutherford: Socks.
 Mrs. Moscrop: Socks, mufflers, mittens.
 Mr. Chas. Sheather: Socks, scarves.
 Mrs. J. Willett: Helmets, cigarettes.
 Dr. Charnock Bradley: Socks, mufflers, mittens, helmets.
 Mrs. Bennett: Mufflers. Mrs. Latta: Socks.
 Mrs. Barford: Mufflers.
 Mrs. Pounceby: Mufflers, mittens.

The men had a splendid day and greatly appreciated this kind gift from the A.V.C. Comforts Fund. Many of the men said they never had such a dinner and good time before.

I am enclosing a postal order for 30/-, the result of a sale by auction of the "Booby Prize" at a whist drive given in our Sergeants' Mess at Christmas. It is their wish that this amount should be given to the Comforts Fund.

Please accept my sincere thanks on behalf of the men.

With best wishes for 1916.—Yours faithfully,
 H. THIRBY.

No. 6 Veterinary Hospital,
 Rouen, 1st Jan., 1916.

I am writing to thank you very much for the excellent Christmas cake sent to me by the Fund. I have been asked to thank you on behalf of the N.C.O.'s for this very acceptable gift. They all enjoyed it very much indeed.

We all had a very happy Christmas in spite of the mud and weather conditions generally.

We all send you our best wishes for the New Year to you and all the workers for the Fund.—Yours sincerely,
 H. E. IRWIN.

No. 6 Mobile Veterinary Section,
 6th Division, Jan. 1.

I was away on leave over Christmas, at my home, and when I got back I got your lovely cake and card wishing

us all good luck. I had all the other five V.O. to tea on New Year day, when we had your cake, and we all thank you and the A.V.C. Comforts Fund, for so kindly remembering us.—Yours respectfully,

J. F. PLAYER, Lt. A.V.C.
37 Mobile Vet. Sec., 25th Division.

New Year's Day.

On behalf of the Section I have to thank you for your good wishes and for the splendid cake which we received a few days ago. It was decided that the cake should be kept for tea to-day, and it has been very much appreciated.

The men have had very good cheer, and have spent as happy a Christmas as was possible under the circumstances.

With every good wish for the New Year. Yours truly,
E. E. JELBART, Capt. A.V.C.,
30th Mobile Vet. Sec.

Jan. 2nd, 1916.

I beg to present my compliments, and on behalf of my Section to offer you our sincere thanks in appreciation of your kindness in sending us the beautiful cake, which we all enjoyed thoroughly. It was not quite in time for Xmas but we had it for New Year's Day. We all extend to you and our kind friends who have done so much for us our heartiest New Year greetings; and we all hope that by this time next year this horrible war will be over, so that we may all get home to our friends again. Most sincerely yours,

ANDREW R. B. RICHMOND, Lt. A.V.C.
O.C. No. 3 Mobile Vet. Sec.

The Cumberland Pig.

As the outcome of preliminary meetings held in various centres, the project to establish a Herd Book for the Cumberland breed of pigs was successfully floated at a well-attended meeting of breeders held at Wigton (Cumberland) on Tuesday. Mr. W. Parkin-Moore, Mealsgate, president of the Shorthorn Society of Great Britain, presided, but Mr. T. B. Schofield, live stock officer, Newcastle-on-Tyne, who is an active mover in the project, was unable to be present.

Mr. J. Steel, V.S., Wigton, acted as hon. secretary, *pro tem.*, and read a report from Mr. Schofield upon the present position. So far, nineteen gentlemen had intimated their willingness to become life-members, at a subscription of £5. One gentleman was subscribing £20, so that they had in hand or promised at present the sum of £110, together with the promise of several days' free motoring for the Inspection Committee. A large number of people had written to him intimating their willingness to become annual members. Others apparently preferred to wait until the project was further advanced before making up their minds. He had applications for membership from Scotland, and it would appear probable that they should receive support from a wide district.

The Chairman: They would see that there had been enough support to justify them in going on with the scheme, so the discussion could be kept to the best way of forming the society and the preliminary arrangements.

Mr. J. Hope, Leegate House, raised the question of the disqualification for the Herd Book of pigs with dark spots.

The Chairman said they had exactly the same difficulties in breeding cattle. They had black noses they did not want in cattle, which prevented their registration. Every pig society had the same difficulty. A very good suggestion had been made—that the Cumberland pigs should be white, and that any with black marks or black hair should be disqualified, but that blue spots as long as the hair was white, whilst being an objection, should not be an absolute disqualification.

In reply to a question:—As far as they could see, the annual subscription should be 10s. 6d., with an entrance fee of 10s. 6d., and that life-members be taken up to the end of that meeting at £5. After that there would probably be no life members allowed.

After discussion, it was agreed that the Council, for first year only, consist of the life members.

The Council were empowered to proceed with the drawing up of the articles of association, rules and by-laws, etc., and generally to take steps to place the society on a sound footing, also to advertise for and appoint a Secretary and other paid officers necessary for carrying on the work of the society.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Soab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended Jan. 1	15	15			2	8	80	171	33	90	220
Corresponding week in											
1915 ...	21	21							18	97	461
1914 ...	20	20			3	18	61	134	9	48	290
1913 ...	11	14			5	15	90	206	15	25	651

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, Jan. 4, 1916

† Counties affected, animals attacked:—

Cambridge 8, Stafford 5.

IRELAND.	Week ended Jan. 1	2	6	...	...	...	...	Outbreaks	8	13	1	...
Corresponding Week in												
1915 ...		...	...	...	...	...	...	...	10	3	5	
1914 ...		...	...	...	...	...	...	2	12	1	...	
1913 ...		...	...	...	...	...	...	9	21	...	35	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Jan. 3, 1916
NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1436

JANUARY 15, 1916.

VOL. XXVIII.

THE COUNCIL MEETING.

Last week's Council meeting was long and also very important. Early in the meeting there was a long discussion on Army matters, in which two things stand out prominently. One is the President's statement regarding the conditions of service of Territorial veterinary officers. This is altogether hopeful. Our Council's recommendations have been passed by the Army Council; the only delay now comes from the Treasury; and the President is confident that all obstacles will soon be overcome, and that the Territorial officers will have "full redress" for their grievances. These are the words of a man who does not talk lightly, and who is in a position to know. Their fulfilment, which we expect soon to see, will be a sufficient answer to those members who imagine that the Council have been doing nothing in the matter.

The next question is a very serious one. Many more veterinary surgeons are required to meet the recently authorised large increase to the Army; and it will be difficult to find them. Something is being done to release veterinary students from the Army to enable them to complete their studies, and some new graduations may be accelerated in this way. But the immediate necessity is for qualified men. It is clear that the numerical resources of the profession, already heavily taxed by the war, will be strained to the uttermost to meet the new requirements. Members of military age who have not yet offered their services may well ask themselves again if they are justified in holding back.

Next we have finance, and questions arising from it. Our financial position and prospects are worse than ever, as was inevitable. Almost as a last resource, a series of drastic retrenchments have been drafted as Bye-laws, and will probably be adopted in April. Most of the long discussion upon these will appear next week; and our only comment to-day is this: they indicate that every economy which was possible without impairing the efficiency of the College is being practised already. Unavoidable as they may be, the new proposals will impair that efficiency, as their promoters are the first to admit.

THE ETIOLOGY OF DISTEMPER.

Wunschheim, in 1913, published the results of numerous series of experiments which he instituted with a view to elucidating the etiological cause of canine distemper (*Deutsche Mediz. Wochenschrift*). Some hold that this disease is caused by an organism of the hæmorrhagic septicæmia group, while others attribute it to a filterable virus. The author's results go to show that neither of these views is correct. His experiments strongly negative the filterable virus view; for he found that the organic juice of dogs affected with severe distemper, filtered through a Berkefeld filter, only succeeded in infecting healthy dogs in some exceptional cases, while unfiltered organic juice was constantly successful in causing infection.

According to the author, the infective agent of distemper belongs to the paratyphoid B. group, and shows all its characteristics. It has been possible to isolate this germ from the blood and from the internal organs of great numbers of dogs affected with distemper or dead from the disease. The germ was grown in pure culture; and this, when inoculated into healthy dogs, reproduced the same clinical picture of distemper.

The author has isolated and cultivated this germ from all the various clinical forms of distemper—from the catarrhal, gastric, exanthematous, and nervous forms, and from the septicæmic form which attacks young animals alone, and kills them rapidly. In cases of the latter nature, the blood contains the paratyphoid B. germ in pure culture.

The author points out that the search for the infective agent of distemper may be of importance in the differential diagnosis of rabies. In the brain of dogs infected with distemper, the so-called "corpuscles of Lentz-Standfuss" are often found. These bodies very greatly resemble the Negri corpuscles which are specific in rabies. When similar bodies are found, the diagnosis of distemper might be established by searching for the paratyphoid B. germ in the cerebral substance.

The author also remarks that the classification of the germ of distemper in the paratyphoid B. group increases the interest of this organism with regard to contagion of man. It is not difficult for the organism to come into contact with meat, and thus it might become the cause of poisoning.—(*La Clinica Veterinaria*.)

[It is not clear whether this worker is a medical man or a veterinary surgeon. The fact that his results were first published in a journal of human medicine suggests the former. So too, perhaps, do one or two of the conclusions.—*Transl.*

STRYCHNINE POISONING IN A DOG.

Miller, of Tübingen, has recorded the case of a dog, about a year and a half old, which picked up and ate some meat containing strychnine. The initial action of the drug became apparent almost immediately, the dog running to and fro, and showing restless and excitement. The first spasms appeared after the lapse of half an hour.

When Miller examined the dog, he was struck by the extreme difficulty of breathing. The respirations seemed to be completely suppressed, and were scarcely demonstrable. The pulse was abnormally strong and rapid. The muscles were stiff and hard everywhere. The limbs were spasmodically drawn up to the body, and could not be extended. The dog drew himself together convulsively at the slightest touch.

Miller first injected about 1/15 grain of apomorph, hydrochlor. subcutaneously. Emesis set in three minutes later. Apparently the dog had not yet had much to eat that day; for the vomited matter consisted of thinly fluid gastric mucus, with which some portions of food, yellowish in appearance, were mixed.

After emesis had ceased, Miller used chloral hydrate to counteract the spasms. He dissolved about two to three grammes of chloral hydrate in 70 to 80 grammes of warm water, added a few grammes of pure olive oil to this, and injected the mixture rectally. As the dog's vital processes had continuously become weaker, he also attempted artificial respiration, but found this impossible on account of the complete stiffness and immovability of the limbs. About ten minutes after the administration of the chloral hydrate clyster, however, a sudden relaxation of the spasms appeared; and the animal visibly revived again. Breathing now took place by means of rapid powerful respiratory movements. Miller now administered a quarter of a litre of strong coffee with some cherry brandy, put the dog on a soft bed, and left him in quiet.

A few hours later, Miller found the dog so far recovered that he paid attention when called, and could walk tolerably well. Some muscular weakness and dulness were still distinctly visible. In the evening, however—eight hours after taking the poison—the dog appeared quite lively, and ate food with an excellent appetite. No subsequent symptoms of any kind were observed.—(*Berliner Tier. Woch.*)

APPARENT CATALEPSY IN A DOG.

Prietsch has observed, in a dog, a condition similar to catalepsy in man. The subject was a hunting dog, upon which a successful laparotomy had been performed to remove a stone that had been swallowed.

Cataleptic attacks afterwards occurred repeatedly. The dog would suddenly stop during progression, remain standing at first with rapidly stiffening muscles, and finally fall. During the attacks the eyes were fixed and expressionless, and the pupils were dilated. The dog was destroyed. It is not stated how long he lived subject to the cataleptic attacks, how long they lasted, or whether any treatment was adopted or a post-mortem examination made.—(*Berliner Tier. Woch.*)

Royal College of Veterinary Surgeons.

QUARTERLY MEETING OF COUNCIL.

A Quarterly Meeting of Council was held at 10 Red Lion Square, London, W.C., on Friday, 7th January, Mr. F. W. GARNETT, J.P., President, occupied the Chair, and the following members were present:—Messrs. Banham, Barrett, Dr. Bradley, Capt. Coleman, Messrs. Dunstan, Howard, Lawson, J. McI. McCall, Sir John M'Fadyean, Mr. McKinna, Prof. Mettam, Messrs. Mulvey, Price, Maj.-Gen. Pringle, c.b., Prof. Share-Jones, Prof. Shave, Messrs. Shipley, Slocock, Sir Stewart Stockman, Mr. Sumner, Maj.-Gen. Thomson, c.b., Mr. Trigger.

Minutes. The minutes of the last meeting were taken as read and confirmed.

Apologies for absence. It was announced that letters regretting inability to attend the meeting had been received from: Mr. J. Clarkson, Major J. W. Brittlebank, Lieut. Walter Burt, Messrs. J. H. Carter, Samuel Wharam and W. Packman.

OBITUARY.

The SECRETARY read the Obituary List.

Mr. MULVEY: Gentlemen, since our last meeting our old friend and colleague, Professor McCall, has gone to his rest. We shall no longer welcome him here, but his name and personality will live in the memory not only of his colleagues but of hundreds of veterinary surgeons in different parts of the world who honour and respect his name. I move, Sir, that a vote of condolence be passed and sent to the surviving members of his family.

Mr. LAWSON: I second that, Sir.

Mr. TRIGGER: As one who had the privilege of sitting at this table for many years with the late Professor McCall, I feel that I should like to add a very few words to what Mr. Mulvey has so ably said. I am quite sure that we shall miss his genial presence here, because he was held not only in esteem and regard, but in affection, by everyone who knew him. He was a man of genial presence and kindly disposition. He will be missed in the veterinary profession far outside the region of this Council, and particularly in that district which he so greatly adorned. His loss is far greater to the veterinary profession than it is to us personally. I am quite sure that everyone here will endorse what I say, that we have sustained a very great loss. I support the resolution which Mr. Mulvey has proposed.

The resolution was carried in silence, all present upstanding.

ADMISSIONS TO MEMBERSHIP.

The SECRETARY announced that the following members had been admitted since the previous meeting of Council:—

Dublin College.

Mr. Patrick Joseph Dunne	Mr. Michael McCartin
Wm. Augustin Joseph	James Mullaney
Flanagan	Thomas O'Connor
John William Hayes	Thos. Fras. O'Connor
Thomas Joseph Kenny	Cornelius O'Driscoll

Glasgow College.

Mr. Henry J. Hughes	Mr. Thos. Mullen Timoney
Neil A. M. MacEwan	

Edinburgh College.

Mr. David Manzie Ireland	Mr. T. Dunning Milbourne
James Bonner Mackie	Martin
	Balfour Philp

Liverpool College.

Mr. Sid. Tunstall Jackson | Mr. Bertie Whittam
E. J. Bernard Sewell |

London College.

Mr. George Stanley Walker.

THE STEEL MEMORIAL MEDAL.

The PRESIDENT: Prof. Macqueen is not able to be here to-day, and he has asked us to defer the presentation of the Steel Memorial Medal to the next quarterly meeting. He asks for your indulgence in this way as it is absolutely impossible for him to be here. I take it that is agreed? Agreed to.

Correspondence. The SECRETARY read the following letters:—

From Prof. J. Macqueen, dated 11th October, 1915:

"Dear Mr. Bullock,—I am much obliged by your letter intimating that the Steel Memorial Medal has been awarded to me. It is a very agreeable surprise: and I desire to thank the Members of the Council of the R.C.V.S. for this mark of distinction, and to assure them that I gratefully appreciate the honour they have conferred on me."

From Mrs. Wartnaby, dated 9th October, 1915:

"Dear Sir,—Will you be good enough to convey my grateful thanks to the Members of Council of the Royal College of Veterinary Surgeons for their kind expression of sympathy towards me in my great sorrow."

From Mrs. Hartley, dated October 9th, 1915:

"Dear Sir,—For my son and myself, I beg to thank the Council of the Royal College of Veterinary Surgeons for their kind expression of sympathy with us in our great loss, and for their appreciation of my late husband."

FINANCE COMMITTEE.

Mr. LAWSON read the following report of a meeting of the Finance Committee, held on Friday, Jan. 7th:—

Financial statement. The Treasurer submitted his financial statement for the quarter, showing receipts from the sale of £1500 War Stock realising £1450 3s. 3d., liabilities amounting to £730 3s. 0d., and a balance in hand of £47 18s. 6d.

Conversion of Consols. The Treasurer reported that the £6100 2½% Consols held by the College had been converted into £4066 13s. 4d. 4½ War Stock 1925-1945.

Mr. LAWSON: I beg to propose that the report of the Finance Committee be adopted.

Mr. MULVEY: I desire to make a brief statement, Sir, on the accounts. You will notice that the loss on the year is £582 19s. 1d., and that our balance in hand is £47 18s. 6d. Before our meeting next July, which is the earliest date that we can expect to receive any money into the exchequer, we shall be called upon for about £500. That means that we have £47 18s. 6d. to meet £500 worth of liabilities. To-day you will probably have before you a scheme by which it is supposed, if it is carried, that we shall save about £500 a year, but with an increased taxation that we have to expect we shall then be at least £100 short of our requirements. Not only have we lost £582 during the year but, looking forward to the coming year, that amount will be very greatly exceeded. I anticipate that our loss on the ensuing year will be over £700. Supposing you carry the proposals to-day by means of which we shall save £500, we shall still want between £200 and £300 in order to carry on. You may say, "Well, let us sell out our War Stock until it has all gone." That will not last very long. We have now £2500 worth left, and that is all we have between us and bankruptcy. I think the time has arrived when we might very justly appeal to the profession to adopt the voluntary system. (Hear, hear.) Had the Bill that has been before Parliament now for

the last three or four years been passed, each of us would then have been subscribing annually the sum of one guinea. I cannot see why we should not ask the profession to act as though the Bill has been passed, and to voluntarily subscribe, say, one guinea a year, towards carrying on and helping us through the difficulty until the Bill does become law. (Hear, hear). If you adopt this proposal of mine—that we should appeal to the profession—and it does not turn out to be a success, it is an outside argument in favour of getting this Bill. I am, therefore, going to ask the members of the Council to-day to issue an appeal to the profession for an annual subscription. On the face of this balance sheet I see nothing else for us to do.

Mr. TRIGGER: I second the adoption of the report.

The PRESIDENT: Does any member desire to speak on it?

Mr. PRICE: I think the time has come when an appeal ought to be sent to the profession. Will Mr. Mulvey formally move a resolution to that effect, so that I can second it,—that a direct appeal be sent to the profession for the members to subscribe at least a guinea a year? That would not prevent them subscribing more if they thought fit to do so.

Mr. MULVEY: No, certainly not.

Mr. SHIPLEY: I think that would be a very great mistake. You should fix the subscription to one guinea a year, neither more nor less; otherwise there are some good fellows in the profession who would send you a great deal, which others cannot afford, and others will be shirkers and will not send anything at all. I think you ought to limit the amount.

Mr. MULVEY: I purposely put it at that amount—one guinea.

Sir JOHN M'FADYEAN: Mr. President and Gentlemen, although, like everyone else who listened to the Treasurer's statement, I am greatly impressed with the gravity of our financial position, I am prepared to agree that we cannot go on in the future as we have been doing in the past, I am not perfectly satisfied that it is a wise move to appeal to the profession for assistance in the shape of voluntary subscriptions at the present moment.

As the Treasurer has mentioned, the Committee appointed to consider the question of retrenchment has drafted a report which will presently be submitted to the Council, and, as the Treasurer has also mentioned, the scheme which the Committee put forward promises a saving of somewhere about £500 a year. Mr. Mulvey's calculations of the deficit for the year that we have now begun are, after all, only an estimate, and I think we should be in a much stronger position—(this is one of my reasons for not being in favour of issuing an appeal at the present moment)—say at the end of the year if we then had to go to the profession and say: "You have evidence of our determination to effect every possible economy in the administration of the College business; we have actually cut down our expenses £500," and if, in spite of that there was a deficit, we could appeal for subscriptions to wipe it out, and annually we could do the same, so as to start afterwards with a clean balance sheet. But in my opinion there is another reason why we should hesitate before attempting to meet our financial difficulties in this particular way.

Mr. Mulvey has said that if this appeal fails that will be a strong argument in favour of the Bill. But supposing it succeeds, it will be a strong argument against the Bill, I submit. Much depends upon what one means by "success." There is not the most remote chance that any such appeal would be as successful as the passage of the Bill would be, but it might be so successful that it would keep us from absolute bankruptcy, and it would not then really be an argument in favour of the Bill. I submit these as considerations that ought to be weighed before we make an appeal to the profession at the present moment.

The PRESIDENT: Gentlemen, I do not know that this discussion is quite in order. What Mr. Mulvey has said in regard to an appeal does partly arise out of our financial position, but at the same time it does not come as a recommendation from the Finance Committee. I do not want to burke any discussion upon it or upon any other point, but the matter which is now before us is the adoption of the report of the Finance Committee.

Mr. McKINNA: We have yet to receive the report from the Retrenchment Committee, and I should like to hear that before I vote on this question. That will be a basis for us to vote upon.

Mr. SUMNER: I take it we can adopt the report of the Finance Committee and leave the discussion of the appeal over until afterwards.

The PRESIDENT: Yes.

Mr. SUMNER: By passing the report we do not necessarily accept the statement of Mr. Mulvey as to the desirability of issuing an appeal.

The PRESIDENT: Or reject it either. I put it to you, unless someone else desires to discuss the matter, that we adopt the report of the Finance Committee.

The resolution was put and carried unanimously.

EXAMINATION COMMITTEE.

Mr. MULVEY read the following report of a meeting of the Examination Committee held on Thursday, January 6th.

Reports on December Examinations. The reports of the Chairmen of the Boards of Examiners, the Local Secretaries, and Delegates were read and approved.

Educational Certificates. Educational Certificates numbered 1577 to 1599 were submitted, and, with the exception of No. 1585, were approved.

Exemption. An application was received from Mr. B. S. Parkin to be exempted from the first year's course of instruction under Byelaw 62A (ii), he being a graduate in Chemistry, Zoology, and Mathematics of the University of the Cape of Good Hope (Rhodes University College, Grahamstown).

It was resolved to recommend: That Mr. B. S. Parkin, B.Sc., be exempted from attendance at the first year's course of lectures, and from the examination at the end of that year, under the provisions of Bye-law 62A.

Correspondence. The following correspondence was received:—

An inquiry from the Rhodes University College as to whether students who had attended courses in Chemistry, Zoology, and Botany at the Rhodes University College would be exempted from the first year's course of lectures, and if they passed the 1st B.Sc. Agriculture of the Cape of Good Hope, be exempted from examination.

Memorandum of the Cambridge Local Examination Syndicate with reference to proposed alterations in the Regulations for the Senior Examination.

A letter from the Principal of the Swindon and North Wilts Secondary School with reference to the required subjects for the Preliminary Educational Examination.

It was resolved: That the correspondence be referred to a Sub-Committee, consisting of the President, the Chairman of the Examination Committee, Dr. Bradley, Dr. J. McI. McCall, Sir John M'Fadyean, Prof. Mettam, and Mr. Sumner, for consideration and report.

Bye-law 93. Applications were received from two final year students for permission to sit for their final examination in July, 1916, although they would not come of age until after the December examination.

It was resolved to recommend: That the proviso contained in Bye-law 93 be suspended for the period of the war.

Prof. METTAM: I propose the adoption of the report. Mr. McKINNA seconded the motion.

Mr. BARRETT: I want to say just one word on the last paragraph of the report relating to Bye-law 93. A good deal of discussion took place yesterday with regard to the suspension of the provisions of that bye-law, and there were some members of the Examination Committee who were not in favour of its total suspension. Could not the bye-law be amended to meet the difficulty? We have difficulties to face during the continuance of the war, but to suspend the bye-law seems to me to be a mistake. Therefore, I merely suggest that we should adopt some amendment of it—such an amendment as will be in harmony with the views of those who are in favour of its suspension.

Mr. MULVEY: It only refers to age. I do not think it will affect more than six students.

Mr. BARRETT: In other words, make your bye-law clear, but insert all the conditions you please.

Sir JOHN M'FADYEAN: I think it is perfectly clear. The circumstances that have arisen are hardly adequately described by saying that they are highly exceptional. The two questions, as it appears to me, are first, whether we are acting lawfully in deciding to suspend the bye-law during the continuance of the war, and secondly, whether, if it is lawful, it is the simplest manner of getting all we desire. About the first I offer no opinion, but I think it is a point to be raised, and I suggest the Solicitor should tell us whether it is lawful to suspend a bye-law.

Mr. THATCHER (Solicitor): I think, Sir, it is clear that, having regard to the Charter, notice will have to be given, but that can very easily be done to-day, and the necessary alteration could then take place in April. That would be in plenty of time for the examination.

Mr. BARRETT: If I may say so, I raised the point because, if I remember rightly, yesterday a second point was raised as to whether the age standard at which the diploma should be granted should not be lowered. Was not that raised yesterday? I think, if I remember rightly, the lowering of the standard of age was raised.

Mr. MULVEY: No. The question simply is that these young men do not come of age, although they are eligible for the examination, until the early part of 1917.

Mr. SUMNER: If I remember rightly, one comes of age in January and the other in June.

Sir JOHN M'FADYEAN: It ought to be made clear for the sake of the outside members of the profession, that we are not proposing by this suggestion that anyone should be given a diploma until the proper time. It is a question of when the student is to be allowed to offer himself for the final examination, he having complied with all our regulations with regard to attendance.

Mr. BARRETT: May I say, in reply to Sir John, who I think was not here yesterday, that I think Sir Stewart Stockman raised the point that perhaps it may be desirable, in order to prevent non-qualified men being appointed to act in the army as veterinary surgeons, that even the age standard should be lowered. That was Sir Stewart Stockman's point, if I remember rightly.

Sir JOHN M'FADYEAN: That is not before us.

Mr. MULVEY: I have no recollection of it.

Mr. BARRETT: A second point was raised yesterday.

Maj.-Gen. THOMSON: I take it that the case of these two young gentlemen is not covered by the latter portion of Bye-law 93.

The PRESIDENT: No. It is in order to facilitate men getting their diplomas practically during the progress of the war who have fully complied with all our requirements, with the exception of age.

Mr. SUMNER: There is another point that operated in making us think it was desirable to vary the bye-law as to age. A particular student will complete his course in July; according to our bye-laws he will be under age, and it would not be competent for him to sit for his examination until the following December, because his birthday is in January, and by our bye-laws he has

to take the examination before his next birthday, so that in that case it looked a peculiar hardship that a man should have to break his studies, not finish them in a sequence, and come up in December for his examination.

Prof. METTAM: And waste six months.

Mr. SUMNER: Absolutely, when he would be presumably as well qualified to practice veterinary medicine in July as in the following December.

The motion for the adoption of the report of the Finance Committee was then put and carried.

PARLIAMENTARY AND GENERAL PURPOSES COMMITTEE.

Dr. BRADLEY read the following report of a meeting of the Parliamentary and General Purposes Committee, held on Thursday, January 6th:—

Case of Mr. H. T. Ashbee. A letter was received from the Secretary of the Treasury, stating that the Lords Commissioners of His Majesty's Treasury were unable to modify their decision relative to the amount of the pension and additional allowance awarded to Mr. H. T. Ashbee, M.R.C.V.S.

Petrol Tax. The Secretary reported that, on the motion of Mr. John O'Connor, M.P., the Chancellor of the Exchequer had included the following Section in the Finance (No. 2) Act, 1915:—

14. For the purpose of giving veterinary surgeons an allowance or repayment of half the amount of motor spirit duty, whether payable under section 84 of the Finance (1909-10) Act, 1910, or this Act, Part I., of the Fifth Schedule to the Finance (1909-10) Act, 1910, shall be read as if the following paragraph were added thereto, namely:—

"(5) To a motor car kept by a registered veterinary surgeon whilst it is being used by him for the purposes of his profession."

Insurance. The Secretary reported that the Special Committee appointed to consider this question had resolved

That the Fire Insurance on the building be continued at the same amount as at present, and that the Aircraft Insurance be increased from £2200 to £4200.

That the amount of the Insurance on furniture be reduced to £2400.

Dr. BRADLEY: I move the adoption of the report.

Mr. MCKINNA: I second that.

The PRESIDENT: Before I put that motion, I would like to suggest that we express our high appreciation of the work of certain gentlemen in Parliament who have been using their best endeavours during the past three or four years to obtain for us the same exemption from the petrol tax which was enjoyed by the medical profession. The first of the gentlemen that we should thank is Sir Lancelot Sanderson, the late member for North Westmoreland. His work has been untiring during the past two or three years, and it was through his influence that assent was obtained from the late Chancellor of the Exchequer, Mr. Austin Chamberlain, to grant us this concession; and when political circumstances were altered, as they were at the time that the Coalition Government came into power, it was practically unanimously resolved that we were entitled to this concession.

Another gentleman whom we should also thank is Mr. John O'Connor, who was the actual initiator of the proposal in the present Parliament. At the same time I should like to mention the energy that has been put into this subject by a very indefatigable worker, Mr. John Holland, of Athy, who has written and done more work on the subject than any other member of the College, outside the members of Council.

Mr. MCKINNA seconded the motion, which was carried by acclamation, and the motion for the adoption of the report was duly carried.

Mr. TRIGGER: Before we pass from this subject, I think the profession would like to know whether we get the half tax off the car as well as the reduction on the amount of the petrol duty, the same as the medical profession.

Mr. MULVEY: On one condition.

Mr. TRIGGER: I know the conditions perfectly well. The medical man gets his car at half tax. So far the excise officers have not had any instruction on the subject, and I think it would be best to wait until they do get an intimation. If we get it off the car as well, now is the time to know, because we take the license out in January.

The PRESIDENT: We have not got the reduction on the license so far as the car is concerned; and I believe I am correct in stating that the reduction in the petrol tax will date from the introduction of the Finance Bill.

Mr. TRIGGER: Then we are not treated on the same terms as the medical profession.

The PRESIDENT: With regard to the petrol tax we are.

REGISTRATION COMMITTEE.

The PRESIDENT: As we are now a quorum I propose to take the report of the Registration Committee. I will first ask the Secretary to read a part of the report that was not dealt with at the last quarterly meeting owing to a quorum not being present.

The SECRETARY read the following portions of the report of a meeting of the Registration Committee held on Thursday, October 7th, 1915:—

1883 (*Peirce, Chas.*). In this case a complaint was made against Mr. Charles Peirce, Fellow and Member of the College, for unprofessional conduct in inserting an advertisement in the *Daily Telegraph* of January last, of which the following is a copy:—

"Lame Horses, Roarers, Rigs, Vicious Mares, Quittors, Poll Evil, Fistulous Withers, &c. For special treatment, operations, &c., apply Peirce's Hospital for Horses, The Manor, Shirland Road, W. Phone Padd. 1161."

The Solicitor read the advertisement, and also a letter received in June last from Mr. Peirce regretting its insertion and promising to see that it was immediately discontinued. Mr. Peirce attended in person, and urged that the advertisement had been inserted in self-defence, as there were four unqualified practitioners carrying on business within a very short distance of him who advertised, but he admitted that the advertisement was wrong, and stated that it had not been continued since the letter above referred to, and promised that it should not occur again.

The Committee consider the charge proved.

Restoration. Applications for restoration were received from the following gentlemen whose names had been removed from the Register under the operation of Section 5, Sub-section (4) of the Veterinary Surgeons Act:—Charles Robert Anderson, George N. Tomlinson, Robert Weir, and Joseph Randolph Welsby.

The Solicitor reported that the applications were in proper form, and it was resolved to recommend

That the names of Messrs. Charles Robert Anderson, George N. Tomlinson, Robert Weir, and Joseph Randolph Welsby, be restored to the Register of Veterinary Surgeons.

The PRESIDENT: Will anybody propose that the report be received and adopted?

Mr. PRICE: I propose that.

Major-General THOMSON: I second it.

The PRESIDENT: It is proposed and seconded that the report of the Registration Committee which was left over from our last quarterly meeting be received and adopted, the necessary quorum being present.

The resolution was carried unanimously.

The PRESIDENT: Gentlemen, that being carried, I have to propose that the name of Mr. Charles Peirce be

removed from the Register of the Royal College of Veterinary Surgeons.

Mr. LAWSON: I second that.

The resolution who then put, and declared by the President carried unanimously, all the members present voting in favour of it.

The PRESIDENT: I now have to propose that the following names be restored to the Register of the Royal College of Veterinary Surgeons: Messrs. Charles Robert Anderson, George N. Tomlinson, Robert Weir and Joseph Randolph Welsby.

Mr. BARRETT seconded the motion, which was carried unanimously.

The SECRETARY read the report of a meeting of the Registration Committee held on Thursday, January 6th, 1916, from which it appeared that eleven cases were considered by the Committee.

In the case of a non-member accused of using the word "veterinary," it was resolved that the Solicitor be instructed to send a cautionary letter.

It was reported that letters had been received from a member, Mr. Charles Peirce, expressing regret for the offence complained of.

In another case of conduct, the member did not appear but was represented by his Solicitor, who submitted a medical certificate stating that he was unwell. After hearing the defence, it was resolved that the case be adjourned to the next meeting, in order that the member might appear in person to show cause why his name should not be removed from the Register for unprofessional conduct.

In a case of advertising, the complainant withdrew the charge; and in another case the Committee regretted that they could not take action in regard to it.

In the case of another member charged with covering and advertising, it was reported that an explanation had been received, but it was resolved that the member be required to submit a formal undertaking that the offence should not be repeated.

In another case it was resolved that the Complainant be informed that the case was one for a Civil Court; and in a further case it was resolved that it did not fall within the jurisdiction of the Council.

In the case of a non-member using the title, it was resolved that the Solicitor be instructed to obtain an undertaking from the person to discontinue the use of the title, and in a further case it was resolved that a prosecution be instituted if proper evidence was obtainable.

Applications were received from Messrs. William Richard Kennedy, Edward Strachan Souter, and George Miller Yardley, for the Restoration of their names to the Register, they having been removed under Section 5, Sub-section (4) of the Veterinary Surgeons Act. The applications were found to be in order, and it was resolved to recommend that the names of Messrs. William Richard Kennedy, Edward Strachan Souter, and George Miller Yardley be restored to the Register of Veterinary Surgeons.

An application for the restoration of the name of Mr. James L. Barling was received, but no action was taken.

The PRESIDENT: I propose that these Minutes be received and adopted.

Major-General THOMPSON: I second that.

The resolution was carried unanimously.

The PRESIDENT: I now propose that the following names be restored to the Register of Veterinary Surgeons: Messrs. William Richard Kennedy, Edward Strachan Souter, and George Miller Yardley.

The resolution was carried unanimously.

On the motion of the PRESIDENT, seconded by Dr. BRADLEY, authority was given for the Seal of the College to be affixed to the prosecution mentioned in the report.

PUBLICATION, LIBRARY AND MUSEUM COMMITTEE.

Mr. PRICE read the following report of a meeting of the above Committee held on January 7th, 1916:—

Presentations to Library. The Secretary reported that since the date of the previous quarterly meeting of Council, the following presentations had been made to the Library:—

The Structure of the Fowl, by Dr. O. Charnock Bradley, D.Sc., M.R.C.V.S.; Anaesthesia and Narcosis of Animals and Birds, by Frederick T. G. Hobday, F.R.C.V.S., F.R.S.E.; Calendar of the Rhodes University College, Grahamstown, 1915; Calendar of the University of Liverpool, 1915-16; Department of Agriculture and Technical Instruction for Ireland: Report of Proceedings under the Diseases of Animals Acts for the years 1906-1908, 1910-13, and 1914; Annual Report of the Bengal Veterinary College and of the Civil Veterinary Department, Bengal, for the year 1914-15; Annual Administration Report of the Civil Veterinary Department, Madras Presidency, for 1914-15; Annual Report of the Camel Specialist, Punjab, for the year 1914-15; Annali Della Stazione Sperimentale per le Malattie Infettive del bestiame, Naples, Vol. 11, Part 2; Composition and Food Units of Food Stuffs analysed at the East Anglian Institute of Agriculture, Chelmsford; The Bacterial Flora of Trees and Men, by Stephen J. Maher, H.D.; U.S. Department of Agriculture:—Pasteurising Milk in Bottles and Bottling Hot Milk Pasteurised in Bulk; Studies in the changes in the degrees of Oxidation of Arsenic in Arsenical Dipping Baths. *The Journal of the Board of Agriculture*, October, November, and December, 1915; *Leaflets of the Board of Agriculture and Fisheries*; *Orders of the Board of Agriculture and Fisheries*; *The Journal of Comparative Pathology and Therapeutics*, September and December, 1915; *Bulletin of the Yellow Fever Bureau*, Vol. 111, No. 4; *The Bloodstock Breeders' Review*, January, 1916; *Revue de Pathologie Comparée*, August-November, 1915; *The Veterinary Journal, News, and Record* for the quarter; *The British Medical Journal* for the quarter; *The Educational Times* for the quarter; *The World's Carriers* for the quarter.

It was resolved that a vote of thanks be conveyed to the respective donors.

Purchases. The Secretary reported that the following had been purchased:—

Tropical Diseases Bulletin, Vol. 6, Nos. 6, 7, 8 and 9; *Tropical Veterinary Bulletin*, Vol. 3, No. 3.

Presentation to the Museum. The Secretary reported that Miss Pritchard had presented a bust of the late Prof. Edward Coleman, F.R.S., Principal of the Royal Veterinary College, London, from 1794-1839.

It was resolved that a cordial vote of thanks be addressed to Miss Pritchard for her gift.

Publication of Register, 1916. It was resolved:

That the Secretary be instructed to have 400 copies bound of the *Register*, 1916.

That the Examination Questions be no longer included in the Register, but that the Secretary shall be authorised to sell separate sets of questions at a fixed price, an extra supply to be obtained when printing for each Examination.

On the motion of Mr. PRICE, seconded by Mr. LAWSON, the report was adopted.

WAR EMERGENCY COMMITTEE.

The SECRETARY read the following report of a meeting of the War Emergency Committee held on Thursday, January 6th.

Conditions of Service A.V.C. The PRESIDENT reported that the recommendations contained in his letter to the Director-General, Army Veterinary Service, re-

ported at the previous meeting, were receiving favourable consideration.

Dearth of Veterinary Surgeons. On the report of the President that a largely increased number of veterinary surgeons are still required for the A.V.S., it was resolved to recommend:—

That letters be addressed to the Board of Agriculture and Fisheries, the Department of Agriculture and Technical Instruction for Ireland, and the Board of Agriculture for Scotland, calling attention to the dearth of veterinary surgeons, and soliciting their support in an appeal to the War Office that all veterinary students should be starred.

That a letter be addressed to the War Office in similar terms, and requesting, in addition, that veterinary students who have enlisted in the ranks should be ordered to return to College and to complete their qualification.

Emergency Examination. The question of holding an emergency examination for Class D students in March was left in the hands of the President.

Veterinary Students and the Derby Scheme. The SECRETARY reported that a Class D student attested under the Derby scheme, and who had appealed to be placed in a later group in accordance with the arrangement made by the Director of Recruiting, had had his request refused by the local tribunal.

The Secretary was instructed to write to the Secretary of the War Office and to the Director of Recruiting, to ask why the local tribunal had not been informed of the arrangement made whereby veterinary students in Classes C and D were to be allowed to complete their studies.

Mr. DUNSTAN: I notice that the report refers to veterinary students who have enlisted in the ranks only. Why is that? Some of our students have commissions in various other branches of the Army.

The PRESIDENT: I think that should be added to the report.

Maj.-Gen. THOMSON: The report might read, "enlisted or commissioned in the combatant services."

Sir JOHN M'FADYEAN: Might I point out that the cases are quite different? The students we have particularly in mind were those belonging to yeomanry regiments before the war, and who had no option but to serve; but the students who have commissions have applied for those commissions, and do not wish to return.

Maj.-Gen. THOMSON: There are some who had commissions in the Territorials before the war.

Sir JOHN M'FADYEAN: The majority of them.

Maj.-Gen. THOMSON: There are some, I know.

Sir JOHN M'FADYEAN: If there are any holding commissions who have repented and desire to come back—

Maj.-Gen. THOMSON: I do not know any of those.

Sir JOHN M'FADYEAN: If there are any of those I think they should be included in the motion.

The PRESIDENT: Yes, I will make that amendment.

Mr. SUMNER: They should be released. That is what I pointed out yesterday,—that they should be discharged or ordered back.

The PRESIDENT: Gentlemen, I desire to propose the acceptance of this report, and in doing so I wish to say, first of all, with regard to the conditions of service in the Army Veterinary Corps of the Territorial Force, that our recommendations have now been passed by the Army Council. The matter is hung up at the present time by the Treasury. Sanction to it may come any day, but it may be some few weeks before it is finally through. I assure those Territorial officers who have been treated in what appears to me a most unjust way as compared with the other members of the veterinary profession in the army that they will have full redress. With regard to the dearth of veterinary surgeons, this is more serious than ever, and something will have to be

done to urge on our young men who are properly qualified to take commissions. The dearth was great enough before this last million men were called to the colours. We have now practically to supply veterinary officers to nearly another million men, and that will give you some idea of the number we require. It means that if we do not obtain sufficient officers the Army Council will be compelled to put persons who have no veterinary degree to do veterinary surgeons' work. That is the reason why the Committee ask that these public bodies should be appealed to again to enable us to have the whole of our students who have been entered on our College books, and have either joined the ranks or obtained commissions ordered back to complete their veterinary education. We are proposing to write not only to the Board of Agriculture in England, but in Ireland and in Scotland—the two latter more especially—that they should release men and employ civilian veterinary surgeons where it is possible. With regard to our own Board of Agriculture, we think that that pressure might be put upon the Army Council and the Director of Recruiting to star all veterinary students, because not only is this an urgent matter for the country from an army point of view, but it is a very urgent matter for the country from an agricultural point of view in the immediate future. By means of these efforts, I think we may be able to show the authorities the folly of depleting the ranks of the Veterinary Colleges by voluntarily taking men who could do far better service to the country by remaining in the schools and completing their veterinary education. (Hear, hear).

Sir STEWART STOCKMAN: May I ask if it has been stated by the War Office that they intend, if men do not come forward, to appoint as veterinary officers men who are unqualified?

The PRESIDENT: They will be compelled to do something.

Sir STEWART STOCKMAN: Why compelled? Can you explain it? My point is this. If we have a shortage of veterinary officers it is exceedingly regrettable, but you cannot make good that shortage by appointing men who have no qualifications at all to act as veterinary officers.

The PRESIDENT: You must do the best you can.

Mr. BARRETT: What are we to do?

Sir STEWART STOCKMAN: I should like to say, as the Board of Agriculture has been mentioned, that so far as Scotland is concerned they employ only one man, and so far as the Board of Agriculture in England is concerned 48 per cent. of the veterinary staff of military age have been allowed to go. In dealing with the last outbreak of foot-and-mouth disease, we came down to the very last man on the veterinary staff. There is no hesitation on the part of the Board in allowing men to go; they will allow as many men to be free as they possibly can; and there is no hesitation on the part of the veterinary staff of the Board. I think I may say with confidence that there is not a single man who will not go, but we have to consider many other things besides. It would be a terrible misfortune if foot-and-mouth disease got over into this country. We have just passed through one of the very worst fights with foot-and-mouth disease that we have had since I joined the Board. I think we must be just a little careful about what advice we give the Department in relation to the Army.

The PRESIDENT: I intended to point out—I thought I made it clear—that my remarks did not refer so much to the staff of the Boards, excepting to Ireland, where they have not been placed at the disposal of the War Office, as in our opinion they might have been, but to the question of soliciting their support in dealing with the War Office, so that indirectly they could be of the greatest assistance to us.

Sir STEWART STOCKMAN: To get the men back?

The PRESIDENT: Yes. I think if the President of the Board of Agriculture took a firm stand on that

point and helped us to show the War Office and the Director of Recruiting the necessity of these men, we should obtain the point we desire.

Sir JOHN M'FADYEAN: I hope that in any representations that are made to the War Office or the Army Council to secure the exemption of veterinary students who are now in the veterinary colleges from service in the Army, reliance will not be placed on mere general statements, such as that the veterinary profession is one of very great importance to the country, and so on, but that actual figures will be supplied first to show that the number of persons who will be added to the combatant ranks of the Army if veterinary students are enlisted is quite negligible from a combatant point of view, and further that figures will be given to show that if the comparatively small number of students now in the colleges are taken away, something approaching a crisis will arise in the course of three or four years. Our Register, to keep it up to the existing figures, requires the admission of about eighty new veterinary surgeons per annum. Even if no veterinary students are taken away anybody can foresee that for the next four years, at any rate, the number of fresh admissions to the profession will not be half that number. In my opinion it is very doubtful whether there will be more than 30 or 40 students presented for the final examination each year during the next four of five years. What I mean is that I think the actual facts, if stated, are so convincing that the War Office would feel obliged to give way on the point.

Sir STEWART STOCKMAN: Is there any idea of how many veterinary surgeons they do want?

The PRESIDENT: I have indicated that, as nearly as I think it advisable to do so, in the statement that I made.

Sir STEWART STOCKMAN: I do not think there is anything in "advisable" with regard to it as far as that goes. We heard at the beginning that it would be against the public interest to declare how many men we have, but everybody knows now; we hear it in Parliament day after day. Everybody knows how many cavalry go to a Division, and they must know how many veterinary surgeons are required. If you say how many veterinary surgeons are required you are not giving away any knowledge at all. The military authorities are far the best judges of what they require, and we ought to have some idea of their requirements. Cannot they give us some idea?

The PRESIDENT: I have no doubt Sir Stewart knows the number of veterinary surgeons required for each Division, and if he finds out how many times the number of Divisions goes into a million, he will have some conception of the very large numbers that we do require almost immediately.

Prof. SHARE-JONES: I think in regard to this matter we should be very diplomatic. We know perfectly well that a similar movement took place in the medical profession, and it resulted in their securing the starrings of the men of the fourth and fifth years. Immediately afterwards they did the same with us. I happen to know that there is a section of the medical profession which is very keen on securing the starrings of men in the first three years, and at any rate there is a fair section of the profession which is totally opposed to it. They think the men in the first three years should go, and that the starrings of the men in the last two years should be sufficient for the time being. That being so, I think no effort should be spared on our part to urge the Government authorities to return to the schools men in the third and fourth years who are now in the combatant ranks. (A Voice: There are very few of them). There is a fair number of them. There were men who went from Liverpool who were within ten weeks of being qualified. That is a practical way of meeting the problem at the present time. If they decline to star the

men of the first three years in the medical schools they will not entertain any proposal from us.

Mr. MULVEY: How many students joined the Services?

Prof. SHARE-JONES: I could not give you the number. Certainly a good number joined from C and D.

Mr. SUMNER: And we have several in B that are due to go up.

Sir JOHN M'FADYEAN: B is not starred.

Mr. SUMNER: I should prefer to leave it without qualification—that the enrolled veterinary students be required to return to complete their education.

Mr. BANHAM: I should like to ask whether the War Office has been asked to employ the civil veterinary surgeons at home in order to release some of the other men. If they did that they would have no end of veterinary surgeons. I know when there was a Division at Cambridge there were five or six veterinary surgeons doing nothing at all; they would have been far better away. The local veterinary surgeons could have done all the work.

Mr. MULVEY: I agree with all Mr. Banham has said.

The PRESIDENT: In answer to Mr. Banham I may say that representations have been made to the War Office in that respect, and I propose that included in this letter there should be a fresh representation made, because now the circumstances have altogether altered. It is far more serious now. There is a far greater necessity that civil veterinary surgeons should relieve these Army veterinary surgeons who are on duty at depots at home. I should like one or two names suggested for a small Committee to consider these letters, because they are very important; they want to be considered. We do not want to omit any points that will tell in the direction we are aiming at in regard to this responsible matter.

Sir STEWART STOCKMAN: Is not there a Committee now?

The PRESIDENT: No.

Sir STEWART STOCKMAN: There is the War Emergency Committee.

The PRESIDENT: Yes, but you do not need the whole Committee.

Mr. BARRETT: Those who could attend would do.

The PRESIDENT: I do not want to come up to London to any meetings.

Mr. SUMNER: We can leave it in the Committee's hands.

The PRESIDENT: We will do it by correspondence.

Mr. BARRETT: Yes, and seek the advice of anybody you please.

The PRESIDENT: All right. If there is no further discussion, I will put the motion that the report be adopted, with the alteration that we include the commissioned men as well as those in the ranks.

The motion was carried unanimously.

RETRENCHMENT SPECIAL COMMITTEE.

The SECRETARY read the following report of the Retrenchment Special Committee:—

The Committee (consisting of the President, the Treasurer, and the three Trustees) beg to report that they have held four meetings and have had under consideration the two matters relegated to them, viz., (1) The amount of insurance effected on the College building and contents; (2) The financial condition of the College.

Insurances. The building and fittings are at present insured against fire for the sum of £4200, and the furniture for £3750; against aircraft for £2200 and £2800 respectively.

The Committee recommend: That the fire insurance on the building be continued at the same amount, and

that the aircraft insurance be increased from £2200 to £4200.

That the amount of the insurance on furniture be reduced to £2400, made up as follows:—Furniture, fixtures, fittings, safes, showcases, specimens, instruments, books, pictures, sculpture, and other contents £1475

One Portrait	£150	
Six "	£100—	600
One "		50
One "		25
		825
Skeleton of "Eclipse"		100

£2400

Finance. The expenditure of the College has exceeded its income for the past eight years, and during the last financial year the excess of expenditure over income was £582 19 1. Owing to the great reduction in the number of students, the income will probably be much further reduced during the next few years.

The Committee consider that, as temporary expedients, economies may be effected in regard to (i) The cost of Examinations; (ii) The work of the Registration Committee, and they recommend:—

Examinations. That at the next election two Examiners be appointed to each subject as heretofore, one of whom shall be elected as senior and the other as junior Examiner. At each examination one Examiner only shall be summoned to act for each subject, the senior Examiner being the first to be called upon, failing whom the junior Examiner to be summoned to act.

That the written papers be made accessible to the respective teachers during the Examination, with permission to make any representations which they think necessary to the Examiners. The Committee are strongly of opinion that no alteration should be made in Bye-law 86, which specifies that the decision of the Examiners shall be final.

That the separate examination in Stable Management, Manipulation of Domesticated Animals, and Principles of Shoeing Healthy Animals, be abandoned, and that the examination in this subject be taken by the Examiners in Hygiene, Class C. Questions may be set on the subject at the Written Examination as part of the Hygiene paper, and the Oral Examination in Hygiene, including Stable Management, should be extended to twenty minutes. The requirement that each candidate shall be certified as having received not less than twenty hours' practical instruction in Stable Management to be adhered to.

That the length of the Oral Examination in Materia Medica be reduced to twenty minutes.

That in the case of the Final Examination, the fees of the examiners be reduced to 10s. per student.

That the payment of £1 1s. per night to Delegates be discontinued.

With a view to further economy the following recommendations are made:—

(i) That Bye-law 66 be amended to read:

"The examination for the Diploma of Membership shall be held in London, Edinburgh, and Dublin twice during each year, namely in July and December," etc.

(ii) That no examination in Anatomy be held at the end of the first year's course. That at the end of the second year's course an examination be held in the whole subject of Anatomy, the written examination to be three hours, oral thirty minutes.

That Bye-law 61 (a) be altered to read: (a) Anatomy. A course of not less than 50 lectures and 20 hours practical instruction on the Anatomy of the Domesticated Animals.

That the following alterations be made to Schedule II:—

(i) That subject No. 1 be deleted from Examination A.

(ii) That subject No. 1, Examination B be made to read: 1 Anatomy of Domesticated Animals. Candidates will be required to show a knowledge of the anatomy of the Domesticated Animals.

Registration Committee. That it be a recommendation to the Registration Committee to exercise every possible economy in connection with cases investigated under Sections 6, 16 and 17 of the Act.

The PRESIDENT: I take it that this is perhaps the most important and serious matter that we have had up for our consideration for some time. As you know, it all comes about through the state of our finances. I do not think any of us would agree to the alterations which the Committee suggest permanently; we only put them forward as temporary expedients owing to our financial position. There is no doubt that if these recommendations are carried out in their entirety they will save the College between £400 and £500 a year. At the same time we do not wish you to go away with the idea that that is sufficient to meet the liabilities of the College. It is most probable that we shall still be faced with a deficit of at least £200 or £300 for reasons which have already been stated to-day. These questions have been very carefully gone into, and they are now open for your discussion. I do not think I need say any more, except to propose that the report of the Committee be adopted.

Prof. SHARE-JONES: Is it your intention that the Council should consider an elaborate report such as we have just heard read without it first being circulated to the Council?

The PRESIDENT: It is our definite intention to get the report through to-day if possible, for the simple reason that if it is to become effective, and if we are to save any money for the coming year, the necessary alterations in Bye-laws must be placed on the notice-board to-day. That is the only point.

Prof. SHARE-JONES: It is very contrary to ordinary procedure,—that the members should be expected to discuss any report, with such details as this report includes, and decide the questions raised without the report having been previously circulated.

Mr. PRICE: I quite agree with the last speaker. It is a very important report, and it ought to be circulated among the members. Surely the College is not going to go bankrupt for the sake of £500. We have money at the present time to fall back upon which will last us for another couple of years at least, and I think the suggestion that Mr. Mulvey made about "tapping" the profession is far more important than passing this report to-day. It might, in my opinion, jeopardise the interests of the College if it was passed.

The PRESIDENT: I should like to point out to Mr. Price and Prof. Share-Jones that it is expedient this should be gone on with. It was only at the last quarterly meeting that the matter was placed in the hands of this Special Committee by the Council, and I believe the Council had then in their minds the fact that in April we re-elect our examiners. If this report is adopted it will make a considerable alteration in our bye-laws, and those bye-laws must be confirmed in their altered form at the April meeting. We shall then act upon them so that we may economise, and save the Council a considerable sum of money. I am prepared, if necessary, to go through this report item by item, so that we can thoroughly grasp the meaning of each one, but I do not think there is anything that needs any very serious consideration to-day. I am prepared, myself, to stay and devote a good deal of time to the matter, and I ask the Council also to make the necessary sacrifice of an hour or two so that it may be carried if possible.

Mr. PRICE: Do not you think that reducing the number of examiners will lessen the prestige of the profession?

Mr. TRIGGER: No.

SIR JOHN M'FADYEAN: On the general question as to whether we should discuss this question to-day, or are in a position to discuss it, I should like to say that I think it cannot have occurred to Mr. Price that, unless we do the things recommended in this Report by the month of April, we shall have no chance of effecting these economies afterwards for a considerable period, because, according to our ordinary procedure, we shall elect an Examining Board as before—two men to each subject, the rate of pay to be as before. We shall have to invite applications, and we shall practically enter into a bargain from which we could not withdraw for three years. So what Mr. Price advises is that we should cut ourselves off from the chance of effecting an economy of £500 a year as an emergency measure. That is in reply to what Mr. Price has said.

I think there is a great deal more to be said for what Professor Share-Jones observed: that it is not a usual course to ask the Council to consider, without previous knowledge, recommendations of such a sweeping and important character as these. But then I would say, with regard to that, that the circumstances are very peculiar, and that some allowance should be made for them. Furthermore, there is this to be said that may serve for the comfort of anybody who feels a little undecided, namely, that no real effect can be given to these recommendations until notice has been posted for three months, and until the matter has been discussed and voted upon by the Council. The Committee are taking really the earliest possible moment to make the Council acquainted with what appeared to them to be the best steps to take in order to effect retrenchment. I do not want to have to ask for the right to speak again, so I wish to be allowed to say now that, although I am a member of the Committee, I do not agree with all the recommendations. The Committee has met in all four times. The third meeting was held yesterday, and I regret to say I was not able to attend it. At the previous two meetings the whole ground had, I thought, been thoroughly examined, and I was under the impression that the Committee had arrived at a final decision with regard to its recommendations. I have ascertained, however, that at another meeting held to-day the Committee has gone over the ground again and made some fresh recommendations; and, although I do not feel that I ought to divide the Committee on the subject, I reserve to myself the right to dissent from its conclusions, and at the proper time to give my reasons for doing so. I would, therefore, only say that the particular recommendation with which I entirely disagree is that students should not be compelled to take any portion of the anatomy examination at the end of the first year. I shall not inflict on the Council at the present moment my reasons for dissenting from that recommendation, but reserve them for the time when the proposal to alter the Bye-Laws in accordance with these recommendations comes up.

Might I, before sitting down, say that the proposals are really not at all complicated? It is quite easy for anybody to be seized of them immediately. The first and most important and most comprehensive is that we shall cease to have two examiners for each subject. I do not suppose that is a proposal of which anybody would approve except as an emergency measure. Everyone who has had any experience of the conduct of examinations must know that it is not desirable that students should, so to speak, be placed at the mercy of one examiner. Nevertheless, the fact may be recorded that the system of having two examiners is a comparatively modern one. When I myself was a student I think I am right in saying there was only one examiner in each subject.

Together with that proposal is coupled another: that teachers should be allowed to make representations to

the examiners with regard to their own students. We know that by the Charter it is not permissible for any teacher to take any part in the examination of his own students, and the Committee recognised that it was useless to make any change in that direction. But the recommendation which has been made is not in conflict with that. It is thought that it would be something of a safeguard to a student if his teacher—who is at present permitted to hear the examination—were also permitted to make representations to the examiner. Speaking for myself, I think it is a privilege that in all probability will very seldom need to be taken advantage of by the teacher; and there is also the question of access to the papers also. The other things are, I think, quite as easily understood, and, as I have already said, there does not seem to me to be any particular difficulty in realising what is the nature of the changes that are recommended: they are not at all complicated.

MR. TRIGGER: As a member of this very small Committee, and I may say from my point of view, very important Committee, the most important that I have ever had to deal with, I should like to say a few words in support of the Report.

Prof. SHARE-JONES: You have decided, Sir, have you, that we are to discuss it?

MR. TRIGGER: I am proposing to discuss it.

The PRESIDENT: I will put my suggestion that we take it section by section, so that we shall not miss any point.

MR. TRIGGER: Before you do that, there are one or two points I should like to mention. The Committee felt in the first place that there was only one way in which we could tackle this matter in order to get a big reduction in our expenditure, and that was on the examination question. The question of the insurances and so on were small matters amounting to only a few pounds. There is only one part of the report to which I take exception, and that is the statement that the stable management examination should be abandoned. That is not correct. The stable management examination is simply transferred to the hygienic examination, and the length of the hygienic examination is extended. The word "abandoned" is calculated to lead to the impression that the examination is actually abandoned. It is not. The other point I want to mention is this. If you adopt the suggestion that the stable management examiners should be re-appointed, I do not know that you could have two better reserve examiners than the stable management examiners. It would meet the difficulty we always have if we ever fall short of examiners and we have to find someone who is outside, who is not on the Board, to conduct the examination. If you have two or more examiners appointed for stable management, you will have those examiners to fill up gaps in other subjects, and that will be a great advantage.

I assure you that the Committee has given the matter great attention, and that much time and trouble have been expended upon it. I hope the Council will be able to come to a unanimous decision on the question. It is a most important one, because we appoint our examiners in April for three years.

The PRESIDENT: With your concurrence, we will take the report section by section. Is that your wish?

Dr. BRADLEY: No.

The PRESIDENT: I am entirely in your hands.

Prof. SHARE-JONES: I am afraid we shall get on to the discussion of very insignificant details, some of which have been mentioned already, if we do that, while one or two of the fundamental features of the report will be possibly either shelved or the time for their discussion will be restricted. This is a matter of some importance to us at Liverpool. Speaking from memory alone, I understand you are proposing to discontinue examining in Liverpool and also in Glasgow. That is

the fundamental feature in your proposal. I take it that you are proposing it simply and solely on the ground of finance.

The PRESIDENT: That is so.

Prof. SHARE-JONES: I wish to move an amendment to that. Whether I do it now or later on depends on whether you are going to take the report piecemeal or as a whole.

The PRESIDENT: Apparently the discussion should go on in the usual way.

Prof. SHARE-JONES: The amendment which I wish to move is this—it is simply to take the sense of the Council, because I know my feeling is not restricted to a few only of the profession—that it would be equitable and much more economical than what you propose now if you had one common centre of examination.

The PRESIDENT: May I point out that we cannot do that without a new Act of Parliament.

Prof. SHARE-JONES: Is that like the laws of the Medes and Persians, unalterable?

The PRESIDENT: You know how long we have been trying to get our new Bill through.

Prof. SHARE-JONES: I should like to take the sense of the Council on the question of one common centre of examination, if it could be carried out. My amendment would be this, that we as a Council decide to adopt the principle of one common and neutral centre of examination, and that we instruct the Examination Committee—the Committee which, by the way, I think should have dealt with the major portion of this work which has been done by the Retrenchment Special Committee—to report to this Council as to the best means whereby that proposal can be given effect to. I can well understand certain centres supporting this report with acclamation, but I can assure you that you will receive very serious opposition to it not only here but elsewhere. We are not taking things lying down, even if the report has not been circulated.

The PRESIDENT: Your suggestion, as a practical means of putting the finances into anything like the state they should be in, is absolutely impossible at the present time. It would mean a new Act of Parliament, and I do not think Professor Share-Jones really suggests that we should apply for that. I think it would meet his views if he proposed that that part of the report be deleted, and then at some future date he can move for a new Act of Parliament, or the Committee could consider the question of getting a new Act of Parliament to meet his views on the single centre of examination question. But it does not arise to-day.

Mr. SUMNER: We have your assurance that this is only a temporary emergency.

The PRESIDENT: It is only a temporary expedient.

Mr. SUMNER: Due to an absolute emergency?

The PRESIDENT: Yes.

Prof. SHARE-JONES: This is where you are hitting the very places which have done most to meet your requirements during the past year or two to get you through your difficulties. We in Liverpool have received from the Council on numerous occasions applications for our students to go elsewhere. We do not instruct them to go elsewhere, but we have put it before them with a little advice, and they have gone invariably. I observe in your financial statement a point in regard to that which scarcely seems to me to be a square deal, and that is—

The PRESIDENT: I cannot allow you to go into that. You might have raised it on the finance.

Prof. SHARE-JONES: I am raising it on this point of students having to go elsewhere for examination. If you are proposing this on the ground of cost—and I take it that is your sole ground for proposing this alteration—I am prepared to maintain that an examination in Liverpool causes very little extra cost to this Council. One of the most heavy items of expenditure, according to the

statement I have before me, is the item of the travelling expenses of the examiners, and you will find that whether you have an examination in Liverpool or not the examiners will have to pass quite near Liverpool. The actual travelling expenses of the examiners to carry out our examination consist of the return fare to Liverpool from Crewe or Chester, whereas we are debited with one-fifth of the whole of the travelling expenses. You pool the expenses in that case; you pool the expenditure, to which we take no exception. Why should not you pool the expenses for the students who go from various colleges, to meet your convenience, from one centre to another? You do not do that. You charge the major portion of that to Liverpool, and I claim that is not fair. If you pool it in one case you should pool it in the other.

The PRESIDENT: I wish you would come to the point which I take it you are proposing—that we should appoint a Special Committee to consider the question of holding our examinations at one centre.

Prof. SHARE-JONES: I move that we do adopt the principle of one common centre of examination.

The PRESIDENT: You could meet your objections to this one point in the report much better by asking for the deletion of the paragraph which refers to it. It is not now the proper time to raise a general discussion on the principle of one centre of examination.

Prof. SHARE-JONES: I should like the sense of the Council on it.

The PRESIDENT: I give you my opinion on it.

Prof. SHARE-JONES: I know what the objections are that will be raised, but I think the sense of the Council should be taken on that very vital point.

The PRESIDENT: On this point I must rule that it does not arise on this Report.

Prof. SHARE-JONES: All right.

Mr. SUMNER: There is a point that will arise, and that is that hitherto our men who have come to London as a common centre for examination have had their travelling expenses paid by the College, so that if this report were adopted a certain amount of extra expense would be put on the students respectively of Glasgow and Liverpool. I should like to know whether it is the feeling of the Council that these travelling expenses should be paid by them, or whether you wish to get out of your difficulty by making the students pay for them. If the students from our school or from the Glasgow school go to another centre to be examined, will the College pay their travelling expenses? If this recommendation were adopted there would be no provision for the Council to make any allowance to students going respectively from Glasgow to Edinburgh and from Liverpool to either Edinburgh or London, so that, speaking on behalf of the students, it would be increasing seriously the cost of their examination and their education. To me it would simmer down to a matter more of sentiment than anything else if the students' extra expenses were covered by the College. I should like to point out that it would be a grievance to a student who had entered, say, at Liverpool, with the idea that the examinations of the Royal College would be held there, if they were held at another centre. He finds that through the poverty of the College it is proposed to hold the examinations at one centre in England and at one centre in Scotland, and that it will be necessary for him to find the cost of travelling from his school to his examination centre. I, like a good many more, think we should have one centre of examination.

The PRESIDENT: This discussion is raised on the point in the report: "That Bye-law 66 be amended to read as follows:—The examination for the Diploma of Membership shall be held in London, Edinburgh, and Dublin twice during each year, namely, in July and December."

Sir JOHN M'FADYEAN: Notice of that alteration must be given.

The PRESIDENT: Yes, but it is far better that we should have a final decision on the point to-day, so that the necessary alterations of the Bye-law may be suspended.

Mr. BARRETT: Must these various resolutions be voted upon to-day? Could not we have them circulated amongst us during the ensuing three months, and then discuss the whole thing at the next meeting?

The PRESIDENT: No. This could very well be struck out in April if necessary. The Committee consisted of the Trustees, the Treasurer, and myself, and our main object in making the suggestion was simply the state of the College finances. I do hope that Mr. Share-Jones will not think that it is a bit at any College. Nothing was further from the minds of the members. It is simply a measure of temporary expediency to carry us over our financial difficulties—over the war more than anything else.

Prof. METTAM: Might I suggest that as a matter of expediency this report be passed and that the various alterations of Bye-laws be suspended? They will have to come up for discussion in April, and that is the time, I think, when the discussion should take place. It seems to me redundant that we should have a discussion to-day and a repetition of the discussion three months hence. I think as a matter of expediency we should pass the report and discuss it when the various amendments come up for discussion.

Sir JOHN M'FADYEAN: May I say that I am in the same position as Mr. Share-Jones—that I should be opposed to this Council tying its hands with regard to the whole of the recommendations that have been made to us? Whoever moves them, I shall endeavour to defeat at least one of them, and I suggest that we should lose nothing at all if we simply agreed that the report be received without adopting it.

The PRESIDENT: It must be adopted.

Sir JOHN M'FADYEAN: No. I suggest that the adoption of it does not give effect to any of the recommendations. They must still be suspended. The Council itself cannot give notice of an intention to alter a bye-law; it must be an individual member. I suggest that the best way of proceeding is to simply take a vote on the question that the report be received.

Mr. BARRETT: One is very anxious to know how to deal with these very difficult circumstances, and after the opinion which Sir John M'Fadyean has expressed it is manifest that there are several questions here which are not agreed to by the whole body of the members. For instance, a very important question is raised: "That the written papers be made accessible to the respective teachers during the examinations, with permission to make any representations which they think necessary to the examiners." That is a very important question which has not any regard to financial considerations at all.

The PRESIDENT: Yes, it has.

Mr. BARRETT: It is an innovation. No expense is saved by the adoption of this resolution. I do not quite know what it means myself.

The PRESIDENT: It is in lieu of going to the expense of two examiners. It is based on giving protection to the students.

Mr. BARRETT: I do not see how it affects the teacher. The teacher merely has access to the examination papers, and has a right to make certain recommendations to the examiners. In other words, you are going to supplant the examiners partly by the teachers.

The PRESIDENT: No. It is only a question of protection for the students.

Mr. BARRETT: I think it is a matter that wants serious consideration, and I am not surprised that there are members sitting round the table who are not in

agreement with the resolution. Therefore, I think it will be wise to adopt Sir John M'Fadyean's suggestion to merely receive the report. A copy of the report can then be circulated to each of us, and at the end of three months we can come prepared to discuss at the next meeting of Council.

The PRESIDENT: At any rate there is no reason why we should not approve the first portion of the report, dealing with the insurances?

Sir JOHN M'FADYEAN: We could approve of that.

The PRESIDENT: And there is nothing very abstruse in the other recommendations if we go through them *seriatim*.

Mr. MCKINNA: What is our legal position with regard to the alterations?

The PRESIDENT: As long as we give three months' notice and the bye-laws are altered at the next quarterly meeting, then everything will be quite all right. It is just like any other alteration of bye-laws; we have to give notice.

Mr. MCKINNA: But as a Council we cannot give notice. Individually anybody can.

The SOLICITOR: The President will give notice.

Mr. PRICE: And then it will be open to discussion.

Mr. MCKINNA: If you have to do that, you gain your point by simply receiving the report, as Sir John M'Fadyean suggested.

The PRESIDENT: The first part with regard to the insurances can be adopted.

Mr. PRICE: I propose the adoption of the report with regard to the insurances, Clause 1.

The resolution was duly seconded, and carried unanimously. *To be concluded.*

Digitalis in Diplococcal Pneumonia.

Since 1891 Professor Maragliano has treated cases of pneumonia in his clinic at Genoa by digitalis in large doses, and the explanation he gave of its action was that it exercised a special antitoxic influence against the pulmonary toxæmia. This idea stimulated research, and Lucallo communicated a paper to the Seventh Congress of Medicine in 1896, in which he concluded from the result of his experiments that this drug had a marked specific bactericidal power against Fränkel's diplococcus, and was capable of neutralising the toxalbumins. Morelli in 1912 observed that the pneumococcus became attenuated and diminished in virulence by contact with digitalin derivatives. Other observers, such as Naegeli, Frank, Wenzel, Barth, and Petrescu, have published statistics of the mortality among cases of pneumonia treated by this method. But pneumonia is a disease which varies singularly in its fatality according to age, particular organic conditions of the patient, and type of epidemic.

In a recent issue of the *Annali dell' Istituto Maragliano* Dr. Manfredi gives details of 18 cases, all differing in severity, age, and date on which the treatment was commenced. In all these cases excellent results were obtained, notwithstanding that the general mortality from pneumonia in Genoa at the time was 24 per cent. A precocious crisis was generally seen when treatment was begun in the first three days of the disease and the mortality was *nil*. Professor Maragliano's method of administration was followed. On the first day four grammes of digitalis was given in infusion and in severe cases the dose was repeated in 24 hours. When the frequency of the pulse began to be less the quantity of digitalis was lowered, and when the pulse reached a figure about normal the drug was suspended, even though the temperature was high. Usually from 12 to 16 grammes of digitalis during the course of a case of pneumonia proved sufficient, and sometimes a less quantity produced the effect.—*The Lancet*.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended Jan. 8	12	12					106	356	15	77	273
Corresponding week in											
1915 ...	20	25			2	2	†	†	23	86	415
1914 ...	22	26			2	2	77	154	9	43	597
1913 ...	16	21			3	24	78	206	11	48	722
Total for 2 weeks, 1916	27	27			1	5	186	527	49	167	493
Corresponding period in											
1915 ...	41	46			2	2	†	†	41	183	876
1914 ...	42	46			5	20	138	288	18	91	887
1913 ...	27	35			8	39	168	412	26	73	1373

† The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked :—

Board of Agriculture and Fisheries, Jan. 11, 1916

IRELAND.	Week ended Jan. 8	...	...	...	...	...	Outbreaks	14	8	29
		...	...	...	...	...	1			
Corresponding Week in	1915 ...	...	...	...	...	...	2	14	2	24
	1914 ...	...	...	...	...	...	...	15	2	26
	1913 ...	...	...	...	...	...	12	10	9	42
Total for 2 weeks, 1916	...	1	5	...	...	...	4	27	9	29
Corresponding period in	1915 ...	...	...	...	...	...	2	24	5	29
	1914 ...	...	...	...	...	...	2	27	3	26
	1913 ...	...	...	...	...	...	21	31	14	77

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Jan. 10, 1916
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

The Board of Agriculture and Fisheries have to-day issued an Order withdrawing all the remaining general restrictions on the movement of animals which were imposed by them in connection with the recent outbreaks of Foot-and-Mouth disease in Somerset and Wilts, no case of the disease having occurred since the 6th ult. The Order will come into operation on the 14th inst.

Board of Agriculture and Fisheries,
4 Whitehall Place, London, S.W.
12th January, 1916.

Greyhound v. Fox.

Mr. J. Fairfax-Blakeborough, writes from the Cavalry, Barracks, Longmoor Camp, East Liss, Hants, "Here at Longmoor, in Hampshire we have a few foxes which come down to feed on the offal around the camp, and which gave an occasional run with our draghounds (now defunct) last season. One day last week a big greyhound put up one of these foxes within two or three hundred yards of the camp, and coursed him from a gorse bush for about fifty or sixty yards. Finding that the pace was too fast for him the fox (which, like his contemporaries, lives above ground) turned and faced the greyhound and a battle royal began and lasted for half an hour before the fox was killed. This greyhound is not very safe to interfere with, or the sergeant or trumpeter, who were on the scene, would have endeavoured to save the fox's life. My own opinion is that the number of foxhounds which will tackle a fox single-handed is small, and the number that will kill a fox single-handed smaller still."—*Horse and Hound*.

A word for the pups.

The Rev. W. Gresswell, Marthall, Cheshire, has the following lively remarks in his "Parish Magazine" for December:—"Now if any of you farmers want to do me a good turn on the cheap I'll tell you how you can do it. Give me now and then a cabbage or two or a few waste potatoes; or if you can't give, sell at the lowest possible figure. I have four hound puppies, and their food is a problem. I must keep them, for I have to look at this war all round and in strict proportion. Hunting has produced the finest soldiers of this war and the finest cavalry. When the strain of their present awful duties is at last over there will be a tremendous reaction on the part of our men in the direction of every form of sport and recreation, and there will be nothing the boys will fly to with such pathetic ardour to efface the past than a day with horse and hound. So I mean to keep my hobby on the boil. By the way, I see from the *Knutsford Guardian*, or rather I infer it, it is a most useful and important thing for a clergyman to have a hobby; it even has its commercial value. A study of agriculture and a knowledge of bees are most valuable qualifications for clerical promotion. I quite agree, though I have to admit woefully I loathe bees and know nothing about bone manure; but then—I don't want promotion; I want cabbages. Hunting makes finer men than honey."—*Horse and Hound*.

The angora goat performs a two-fold service in the Canadian scheme of farming. It produces a high grade of mohair and at the same time may be used for the destruction of underbrush on land to be broken for subsequent cultivation.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Jan. 7.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieut. to be temp. Capt.:—H. E. Whitmore (Dec. 13).

To be temp. Lieut.:—C. W. Finnemore (June 9) (substituted for notification in *Gazette* of June 17).

To be temp. Lieuts.:—D. M. Ireland, G. S. Walker (Dec. 27); B. Philp (Dec. 28).

Jan. 10.

To be temp. Lieuts.:—J. D. Whitehead, F.R.C.V.S., C. B. Shemmonds (Dec. 28).

Jan. 11.

Majors to be temp. Lieut.-Cols.:—T. W. Rudd, W. S. Anthony, A. J. Williams (Dec. 18).

Capts. to be temp. Majors:—J. R. Hodgkins, W. H. Walker (July 10); V. C. Leckie (Aug. 13); A. Hodgins (Sept. 14).

To be temp. Capt.:—G. Moir (Dec. 27).

Jan. 12.

To be Lieuts. to be temp. Capts.:—B. H. Mellon (Dec. 16); J. H. B. Martin (Dec. 29); A. Whicher (Dec. 30); J. MacBride, A. R. B. Richmond, H. B. Collett (Dec. 31); G. G. Howard (Jan. 1).

To be temp. Lieuts.:—A. D. Morgan, J. McC. Barry, W. J. Moran (Jan. 1); W. A. Smith (Jan. 2).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Jan. 7.

Capt. to be temp. Major:—F. J. Taylor (Dec. 20).

Jan. 8.

To be Lieut.:—J. Andrew (Jan. 9).

Jan. 12.

To be Lieut.:—T. M. C. Hunt (Jan. 13).

The following casualties in the Expeditionary Force are reported:—

DIED—Sgt. R. S. Randall, SE/7503.
Pte. C. Hodgkinson, SE/8044.

The following casualty in the Indian Forces (Persian Gulf) is reported:—

DIED—Umrao Ali, Jemadar (Veterinary Assistant), Supply and Transport Corps.

The A.V.C. Comforts Fund.

Dear Sir—I have pleasure in sending you further lists for favour of publication in this week's issue if possible.

May I say how much I appreciate the most kind efforts of Mr. Charles Morgan and Miss Harper in organising and carrying through with such good results the Christmas Fair, from the proceeds of which our A.V.C. Comforts' Fund benefits so largely.

Mrs. Baird, Edinburgh, has also organised an entertainment for benefit of the Comforts Fund, of which I hope to be able to give further details in my next letter. It is most gratifying when ladies in different centres will thus work up interest and gain contributions. Yours truly,

ADELAIDE M. MOORE.

Strathyre, Parsifal Road,
Hampstead, N.W.

Further List of contributions received to Jan. 12th.

per Mr. Charles Morgan and Miss Harper, part proceeds of Xmas Fair held at Nonington Hall, Dover	£56	1	0
Mrs K. McL. Mackenzie	5	0	0
Capt. W. Ascott, A.V.C.	1	1	0
Lt.-Col. C. B. M. Harris, A.V.C.	3	0	0
Lt.-Col. A. W. Mason, A.V.C.	2	2	0
	£67	4	0

CORRECTIONS.

In the list published in our issue of Dec. 18 last (p. 277) Mr. J. Nolans, of Birr, was wrongly described as M.R.C.V.S.

In the list published in our issue of Jan. 8 (p. 311) the item £13 1s. was the Christmas gift of the Officers, N.C.Os., and men of Base Vety. Hospital No. 5, to their comrades overseas

Gifts received from:

Mrs. Shipley: Mufflers, helmets, mits, socks, books and magazines
per Mrs. J. M. Booth (Ashington Working Party): Mufflers, socks, shirts
Mrs. Ascott: Socks, mits, cuffs, helmets, belts, mufflers
Mrs. Edwards: Muffler, caps, mits
Miss Butler: Mufflers, helmet
Mrs. Walker: Mufflers, socks
Mrs. P. Nicholls: Caps, mits, socks
Mrs. Clayton: Mufflers, mits, cap
Mrs. Heyland: Socks. Miss Charlton: mits

MOTOR CAR LICENSES.

Sir,—Lest any member might overlook the fact of his being entitled to motor car licenses at half, it can do no harm to call attention to it, as this is the time for filling Declaration Forms for Motor Car Licenses.

The form applicable to medical practitioners should be demanded. The ordinary form is the one likely to be issued at present, but it should not be filled up by us.

Veterinary Infirmary, Yours truly,
Model Farm, Athy, JOHN HOLLAND.
10th January, 1916.

THE COLLEGE FINANCES.

[COPY.]

Muttusmoor, St. Nicholas Road,
Upper Tooting, S.W.,
Jan. 11th, '16.

Dear Mr. Bullock,

In fulfilment of the pledge which I virtually gave at the last Council Meeting, I beg to enclose cheque value one guinea, being the amount which I propose to subscribe annually, on the 1st of January, to the funds of the Royal College of Veterinary Surgeons, in the same way as every member would have done had the "Bill" which has been before Parliament for the last three or four years become law; and I venture to express the hope that the majority of the profession may be induced to do likewise. Anyone reading the balance sheet and the report of the Retrenchment Committee can come to no other conclusion than that funds must be obtained by some means or other if the College is to continue to carry on the useful work which it has done for so many years, and to avoid, if possible, whittling down the examinations to breaking point in the vain attempt to save money at expense of efficiency.

I am, yours faithfully,
W. J. MULVEY.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1437.

JANUARY 22, 1916.

VOL. XXVIII.

RETRENCHMENTS IN EXAMINATIONS.

Two things should be remembered in connection with the "examination retrenchment" proposals of the Council. First that they are as yet no more than proposals; for the long discussion upon them which we print to-day was only a preliminary one. Its result is that certain selected alterations are now suspended as projected bye-laws—not all by the same proposer, for the Council are not yet in complete agreement—and their final consideration will not take place till April.

Secondly, all these projected alterations are merely temporary expedients. It is only as such that their proposers advance them, fully recognising their retrogressive character. We need have no fear of their permanence, and that is reassuring—for, so long as they last, their effect must be retrogressive.

The proposal to practically halve the staff of examiners—to utilise only one examiner in each subject—is sufficiently objectionable. The additional provision that teachers shall have access to the written papers and be enabled to make representations to the examiners will modify its ill effects a little, but probably not much. Under our Charter, the teacher can have no deciding power—the sole decision of the student's fate will rest with the one examiner. The only merit of the proposal is the great saving it will effect; and that must reconcile us to its disadvantages for a time.

We are not sure that the proposal to have only one examination in anatomy at the end of the second year is not even more objectionable. Its legality has been questioned, and probably will be again next April; but the more important feature is its probable effect upon the knowledge of the student. There are subjects which, if ill-learned at college, can quite well be re-learned in after life; but anatomy is not one of them. If a man does not become a competent anatomist as a student, it is fairly safe to say that he never will do so. The proposal in question, if adopted, will probably mean that most students will devote less time to serious anatomical study, and that a greater element of cramming will enter into their work, than under the present system. For that reason, apart from the legal question, we should be glad to see it dropped.

There are some minor retrenchments upon which we need not dwell. Taken as a whole, we can only view the proposals with regret. Nothing could better illustrate the financial straits of the College than that the Council should feel compelled to resort to such economies as these.

SOME CLINICAL NOTES TAKEN IN FRANCE.

I.—ENLARGED SPLEENS AND LIVERS.

By P. A. WILKS, M.R.C.V.S., B.Sc.

Perhaps some erudite pathologists or profound clinicians may be able to throw a little light upon the series of (to me) spleen and liver phenomena that appeared in the two Reserve Parks of the Indian Contingent during the time that I was Veterinary Officer to them. I am hoping to gain some knowledge upon a matter that is, I think, somewhat mysterious. I think it will be well to give some details as to the formation of these units, to help to trace the source of infection, whether it be England, the Valley of the Loire, or perhaps even India. I admit I am, as yet, quite in the dark. The first I saw of these horses was in the middle of September, 1914. They were the ordinary mixtures of Shires, Clydesdales and Vanners, in various states of health and condition. There were itchy skins and running noses. When I became insistent on these matters I was given 48 hours leave, and was told it was no concern of mine until a certain midnight when they would be entrained. At Southampton we embarked for what we expected to be a seven or eight hours voyage; unavoidably, however, it was well into the sixth day before we got to France. These units were finally got into working order "somewhere" in the centre of France, and it was there that we had to tackle the largest outbreak of pink-eye I have ever had anything to do with, or probably ever shall have. We had great difficulty in persuading certain gentlemen that it was not glanders: but we managed to do so eventually. Glanders would, in reality, have been a much simpler matter.

At this camp everything was Indian except the heavy transport horses from London. I make this statement for what it is worth. We had no reason to suspect any infection from French horses. My unit was almost the last to leave, and we were recruiting from the sick lines immediately to entraining. The first of my odd cases came to my notice on December 26th, and as it is more or less of the whole I will endeavour to describe it in detail, and only refer to the others incidentally. There were 32 cases in all, and I only had the opportunity to make one post-mortem.

She was a grey Clydesdale mare, seven years old, that had survived the pink-eye in October, and had apparently made a good recovery and been left with no sequelæ. She was lame with the near hind limb, and that day all examination failed to find any cause. The following day I noticed a sharply

defined protuberance behind the last left rib, that was painful on pressure, though there was no sign of injury. It was like half a big orange, and disappeared slowly behind the rib on pressure, but quickly reappeared. She was not eating well, and had a temperature of 101° F. The pulse was 60, the membranes a little pale, and she groaned a little on being turned sharply to the left, or on being backed. Respirations were normal in number but slightly laboured. Examination per rectum revealed an enlarged spleen to me, for, I think, the second time in my life. Anyhow, there was no doubt about it now, as it was as hard, firm and distinct as a piece of railway-sleeper would have been. The liver I could also distinctly feel to be abnormally large. The bowels were constipated, so I gave one tablet of arecoline compound subcutaneously, and blistered over the spleen with biniodide of Mercury. The next day she trekked fifteen miles behind a wagon without any apparent harm, and remained in about the same state for a week.

In the meantime two other cases occurred in which the lameness and protuberances were on the right side. Rectal examination proved the liver and spleen greatly enlarged. I sent a report to the O.C. Veterinary Base Hospital asking if any similar cases had been reported or sent in, but received no reply. This was hardly to be wondered at, considering the pressure at which V.B.H. were working. Having become intimate with a French civilian veterinarian who was fairly well equipped for bacteriological work, we punctured the spleen from the outside and found many piroplasmata in red blood corpuscles. We found these also in blood from the palate and the coronet. We attempted to make cultures, but were either too much in the dark or too ignorant of methods to learn anything of value.

All the cases were now beginning to lose flesh, so I determined to commence some kind of treatment. I gave the grey mare, night and morning, arsenious acid 30 grains, sulphate of copper and sulphate of quinine, of each a drachm, in a ball. In three days she showed improvement, and in a fortnight seemed all right, and was at work. After this each case was treated the same, and all recovered except one. This animal went from bad to worse, became extremely emaciated, and the protuberant spleen could be seen even from a distance, so I destroyed him and made a p.m. The spleen turned the scale at 15 kilos. On section the capsule was very hard, and the interior a trifle softer than normal, at the same time the reticulum looked more pronounced. The pancreas was harder than usual and extremely adherent to the stomach and the portal vein. The duct of Wirsung was occluded and like a piece of stick. All the lymphatic glands I examined were hæmorrhagic. The heart was a little flabby and pale. Everything else seemed normal.

A few cases after treatment did not recur, but most of them did, and as they were getting rather a nuisance I managed to evacuate them for some reason or other. There were odd cases as late as June last year. Major H. A. Douglas. S. and T.C.,

the O.C. of one unit, who is an amateur pathologist of no mean experience of tropical diseases, can offer no explanation, and on account of our nomadic existence I was unable to enquire of other veterinarians.

There will undoubtedly be some eyebrow lifting in some quarters at my dose of arsenic—I never give less. I have many times given an ounce in a week for canker in the foot, and with most excellent results.

Royal College of Veterinary Surgeons.

QUARTERLY MEETING OF COUNCIL.

Concluded from p. 324.

The PRESIDENT: Now I ask you to take a vote on whether you will go through this second portion of the report to-day?

Sir JOHN M'FADYEAN: Please read it.

The SECRETARY read the report: "The Committee consider that, as temporary expedients, economies may be effected in regard to (i) The cost of examinations: (ii) The work of the Registration Committee, and they recommend as follows:—(i) Examinations. (a) That at the next election two Examiners be appointed to each subject as heretofore, one of whom shall be elected as senior and the other as junior Examiner. At each examination one Examiner only shall be summoned to act for each subject, the senior Examiner being the first to be called upon, failing whom the junior Examiner to be summoned to act.

Sir JOHN M'FADYEAN: If it is in order, I will move that the Council expresses its approval of that recommendation. That is a matter of principle that must be settled for the reasons that I explained before.

Mr. TRIGGER: I second that.

Mr. SUMNER: Would it be possible to appoint two examiners, one of whom only should act at alternate examinations? At present you suggest a senior and a junior examiner. Would not it be better if we appointed two examiners in each subject, and one of those conducted the July examination and the other examiner the December examination?

Mr. TRIGGER: I think the Committee would accept that.

Sir JOHN M'FADYEAN: I think it is only the principle we should commit ourselves to.

Mr. SUMNER: I am rather inclined to consider the sensitiveness of our examiners. I should like to point out also, as a teacher, that probably it would be more difficult to educate the Christmas men for so-and-so as examiner, and the July men for so-and-so as an examiner, but as a teacher I should approve of it.

Sir JOHN M'FADYEAN: That is one of the gravest aspersions on our system of examination that I have heard. As a member of the Committee, may I explain what our intention was, at any rate? It was that one of the examiners, who was to be called the senior examiner—(and which of the two is to be the senior examiner is to be determined by the Council at the time of the election)—is to be the real examiner, and the other is to be a reserve examiner; so that the senior examiner, provided he can examine, would always examine during his period of office.

Mr. SUMNER: Might I suggest that you should use the terms "examiner" and "reserve examiner?"

Mr. MCCALL: Why insult the examiner by calling him a "junior examiner?"

Prof. SHARE-JONES: And why should not they take alternate examinations?

Sir JOHN M'FADYEAN: No. Mr. Sumner has told you the reason.

The PRESIDENT: There is no reason why they should not be called "reserve examiners."

Mr. SUMNER: I think that would be wiser.

Prof. SHARE-JONES: I respectfully submit that if you had three and let them take it in turns, that would get over one of the weaknesses of our system of teaching for an examiner rather than teaching the subject.

The PRESIDENT: The question in this Clause is one of principle—whether we should have one examiner under our temporary expedient or not. That does not seem to me a very difficult matter.

Mr. SUMNER: As a temporary expedient, we will agree.

Mr. BARRETT: Might I point out that if this resolution is passed as drafted you have the provision here that "one examiner only shall be summoned to act for each subject, the senior examiner being the first to be called upon, failing whom the junior examiner to be summoned to act?"

Mr. SUMNER: That would be the examiner and the reserve examiner.

The PRESIDENT: Call him the "deputy examiner" or the "reserve examiner."

Prof. METTAM: The "reserve examiner."

Sir JOHN M'FADYEAN: That is merely a matter of drafting afterwards.

Paragraph (a) with this alteration was passed.

Mr. PRICE: Is it necessary to go all through these?

The PRESIDENT: Yes. It presses it into your head and you cannot forget it.

Mr. PRICE: My head is pretty thick!

The PRESIDENT: The next is, "That the written papers be made accessible to the respective teachers during the examination, with permission to make any representations which they think necessary to the examiners. The Committee are strongly of opinion that no alteration should be made in Bye-Law 86, which specifies that the decision of the examiners shall be final?"

Mr. SUMNER: Personally, I should like to know what is meant by that particular paragraph. The examination papers are set from here, and we have our written examination, which is held in the presence of a local Secretary and a delegate. When the papers are opened, to whom can we make representations? The examiners will not be there.

The PRESIDENT: It is after the examiner has gone over them—at the time of the oral.

Mr. SUMNER: You can challenge the questions at the oral?

The PRESIDENT: Yes, and make any representations you wish to the examiner. The object of this Section is simply to protect the student—to give his teacher the power not only to hear the oral examination, but also to see how he answers his questions in the written examination; and the teacher has power to make representations in order to clear up any doubtful points that he thinks the student might have intended to make and had not made clear to the mind of the examiner.

Mr. SUMNER: But that will have to be made at the oral, after the mischief has been done.

Prof. SHARE-JONES: Would the teacher be entitled to put a few questions to the student in the presence of the examiner to elucidate a point? (Laughter).

Sir JOHN M'FADYEAN: No.

Prof. SHARE-JONES: I do not think there is anything to cause a lot of hilarity on that. This is merely a subterfuge, then, devised to circumvent a bye-law which prevented us appointing internal examiners, and yet enabling the teacher in effect to do a certain amount of the examination as near as the bye-law will allow.

Sir JOHN M'FADYEAN: As the person who really moved this, I should like to say that Mr. Share-Jones has correctly described it, and that I am not in the least ashamed of it. I decline to be ashamed of a proposal that one should endeavour to improve the examination from the point of view of the students, without deteriorating it in any other respect, by giving the teachers something to do with the examination. I shall not be revealing any secrets when I say that the members of the Committee did not see eye to eye with regard to this, or indeed with regard to any of the proposals. I believe that it was represented that if the Council were to adopt this recommendation it would be interpreted as a great slight on the examiners—that no self-respecting examiner would agree to serve on condition that a teacher was to be allowed to read the papers that he had marked. I regard that as an aspersion on the examiner. I am absolutely at a loss to understand why a competent examiner and an honest examiner should object to anybody knowing exactly what marks he has assigned to the students. I am sure those of us at any rate who are teachers do not want to conceal anything. It is perfectly understood that what is recommended is that the written papers, after they have been marked by the examiner, are, if necessary, to be made accessible to the teacher, and that he is to be at liberty to make representations to the examiner with regard to the marks assigned, if he likes.

Mr. SUMNER: Good.

Sir JOHN M'FADYEAN: And that, without any attempt to belittle the scope of the thing, is what was intended. I think I said before that I do not think this will lead to any unpleasantness, or any frequent unpleasantness between examiners and teachers; I think the examination will be conducted just as harmoniously as before, but I think it will do something to give the students confidence in the examination—greater confidence than they would have if they were left to the tender mercies of one examiner.

Mr. TRIGGER: As one who had some little difficulty at first in accepting this amendment, I wish to say as a member of the Committee, that I now absolutely accept it, because it is completely safeguarded, from our point of view, by the fact that it will not interfere with the authority of the examiner at all. The teacher can very properly point out to the examiner anything to which he wishes to call attention, and a sensible examiner will only be too pleased to have his attention called to any marking on which there might be any difference of opinion. But the teacher has no vote whatever in the final decision. The examiner's decision is final, and that is what convinces me that it was a perfectly fair proviso to insert.

Mr. BARRETT: With regard to this resolution, I think myself that it will be great mistake if we pass it to-day. Two or three very important matters arise in connection with it. May I say, with regard to what Sir John M'Fadyean has said, that he has not correctly represented the import of this resolution here? There, perhaps, is no objection to teachers reading the written examination paper, but here it says they will have "permission to make any representations which they think necessary to the examiners." There can be no question at all that if this resolution is embodied as a bye-law, the teacher will acquire powers far in excess of those which he at present enjoys. Sir John M'Fadyean further said that he was to read the paper after the marks had been awarded to the student. This resolution says nothing about that at all; it says nothing about "after the marks have been awarded."

Sir JOHN M'FADYEAN: I assume that generally it would be after.

Mr. BARRETT: Sir John argues that the teacher would have access after the marks have been awarded. All I can say is that the resolution says nothing of the kind.

The PRESIDENT: May I point out that it would be useless to the teacher to go over the paper before the examiner had assessed the marks, because he would not know how the examiner appreciated the answers of the student? It is such an obvious thing that I do not think that it requires any explanation.

Mr. BARRETT: It is not obvious to all of us. I think it would be a mistake to pass the resolution as it stands to-day—I do not desire to oppose it, as I have no interest on the matter one way or the other. If the bye-law is passed in the language which is used here, then we shall have a confused bye-law which will give rise to subsequent trouble. I think the matter should be deferred, and that we should not pass it to-day.

Sir STEWART STOCKMAN: As to the conduct of examinations, I have had a certain amount of experience. I have examined in two schools at least, where I, as an outside examiner, co-examined with the teachers. I got the paper after the teacher had marked it; it was referred to me. I take it that one of our examiners gets the paper after the other has examined it, and he says whether he agrees or not. All this Committee suggests is that the examiner shall mark the paper first, and then that the teacher shall come in and agree, and if he does not agree the weakness of the thing is that he has no further power. I think he should have further power.

The PRESIDENT: We cannot do it.

Sir STEWART STOCKMAN: Then we cannot, but I think it would be a very good thing if it could be done. I approve of the thing as far as it goes, because it is all the length we can go.

Mr. BARRETT: I am not opposed to it in this way: if the teacher has permission to do it, by all means let him do it. There is a good deal to be said for the principle, but it is not the principle which has been applied in our examinations nor allowed by the legislature.

The PRESIDENT: I point out again to Mr. Barrett that these are only temporary expedients to get over very grave financial difficulties.

The paragraph was then put and carried.

The PRESIDENT: The next is, "That the separate examination in Stable Management, Manipulation of Domesticated Animals, and Principles of Shoeing Healthy Animals be abandoned, and that the examination in these subjects be taken by the Examiners in Hygiene, Class C. Questions may be set on the subject at the Written examination as part of the Hygiene paper, and the Oral examination in Hygiene, including Stable Management, should be extended to twenty minutes. The requirement that each candidate shall be certified as having received not less than twenty hours' practical instruction in Stable Management to be adhered to."

Mr. SUMNER: We do not like the word "abandoned" there.

Mr. TRIGGER: It should be "transferred."

Mr. SUMNER: And it has never been the habit to set questions in stable management. Why institute it now?

Sir JOHN M'FADYEAN: What the Committee were unanimously agreed upon was that we could not, so to speak, blot out stable management altogether as regards instructions and examination. All our proposals are merely directed towards economy, and it was felt that examiners in hygiene could quite well test the students' knowledge of stable management at the same examination. It is quite possible that, as heretofore, the testing shall be mainly done by the oral examination. You will observe the words are permissive—"Questions may be set" on stable management.

Mr. SUMNER: It is all right with the word "transferred" instead of "abandoned."

Paragraph, with this amendment, was passed.

The following paragraphs were passed:—

That the length of the Oral examination in *Materia Medica* be reduced twenty minutes.

That in the case of the final examination, the fees of the examiners be reduced to ten shillings per student.

That the payment of £1 1s. 0d. per night to delegates be discontinued.

The PRESIDENT: Then we come to a clause which raises the important point. "With a view to further economy the following recommendations are made:—

That Bye-law 66 be amended to read as follows:—

"The examination for the Diploma of Membership shall be held in London, Edinburgh, and Dublin twice in each year, namely, in July and December," etc.

Mr. SUMNER: That was the point that I raised.

The PRESIDENT: You can propose that that be deleted.

Mr. SUMNER: I think if that was left, as it is now, to the discretion and to the good offices of the schools, the schools would meet you.

The PRESIDENT: And, therefore, this might be deleted.

Mr. SUMNER: Probably it would save friction in other places as well.

Mr. MCCALL: I take exception to this also. Edinburgh and Glasgow are about equi-distant from London, and I suggest that the examination should be held alternately at Edinburgh and Glasgow.

Prof. SHARE-JONES: And make it Liverpool and London alternately.

The PRESIDENT: I should propose that it be deleted.

Prof. SHARE-JONES: Why not have the very fine arrangement that we had last time? Why not keep that up? We had a most elastic plan in that way—one year at one centre and another year at another centre. It worked out like the alphabet.

Mr. SUMNER: We will object, if you do not, because our students are under contract, and you are under contract with our students.

The PRESIDENT: You propose that this be deleted?

Mr. MCKINNA: I should leave it to the good will of the schools to meet the Council.

Prof. SHARE-JONES: They have never declined to do so.

Mr. SUMNER: We have never refused.

The PRESIDENT: I have a proposition from Mr. SUMNER that this section be deleted.

Mr. MCCALL: I second that.

Sir JOHN M'FADYEAN: I think it would be a very good thing if one could secure what the Committee had in view, namely, economy, by agreement. We have heard it suggested that even if this is not passed the schools will probably be inclined to co-operate with the Council in the endeavour to effect this economy. I take it that that is an expression of opinion that where there are only some two or three students to be presented in one class, the school would offer no objection to those students being asked to go to the nearest centre. If that can be relied upon, I think that, inasmuch as this is only an emergency measure, at any rate, the Council might quite well accept that assurance, it being remembered that if any school proves, so to speak refractory, and stands upon its present full rights to the extent of even requiring a Board to go to examine two students, then the Council will be provided with an argument for effecting the alteration which is suggested here. In the meantime, I suggest that the recommendation should be withdrawn.

Mr. SUMNER: Might I ask whether this Council has any reason to doubt that the school with which I am associated will do all and everything in its power to meet the Council, as evidenced by past history?

Sir JOHN M'FADYEAN: That is invidious.

The PRESIDENT: We have passed votes of thanks to the school that you are connected with.

Mr. SUMNER: We know all about that, but there is a suggestion at the back of what was said.

The PRESIDENT: No, there is not.

Mr. SUMNER: Then I am sorry if I have gained that impression.

The PRESIDENT: I am sure it is a wrong impression.

Prof. SHARE-JONES: We have felt that the student has a position to be considered in connection with this. The Secretary will bear me out when I say that we have never instructed the students to go to any particular centre; we have always left it to the student to select the centre where he will go. He generally goes to the one which he considers most convenient.

The PRESIDENT: It has been proposed and seconded that this recommendation be deleted from the report.

The resolution was then put and carried.

The PRESIDENT: The next is:—

"That no examination in Anatomy be held at the end of the first year's course. That at the end of the second year's course an examination be held in the whole subject of Anatomy, the written examination to be three hours, oral thirty minutes.

That Bye-law 61 (a) be altered to read:—

(a) Anatomy. A course of not less than 50 lectures and 20 hours practical instruction on the Anatomy of the Domesticated Animals.

That the following alterations be made to Schedule II:—

(i) That subject No. 1 be deleted from Examination A.

(ii) That subject No. 1, Examination B, be made to read:—1. Anatomy of Domesticated Animals. Candidates will be required to show a knowledge of the Anatomy of Domesticated Animals."

Sir JOHN M'FADYEAN: I beg to move that that portion of the report be deleted. I am not quite sure whether I should trouble the Council with what appears to me to be the reasons why this course should be adopted, because I have already explained that, even if the Council approve of the recommendation, it cannot be made effective except in the usual way. Notice must be given, and that notice must be suspended for three months. But I should like to be allowed to say that my objection to the proposal is founded mainly on a fear that if you defer the student's examination on any portion of anatomy until the end of the second year, he will not work at anatomy during his first year, and I am not in the least comforted by being told that the bye-laws are to insist upon his receiving lectures during his first year. We all know that one man can take a horse to the water, but ten men cannot make him drink, and, speaking with forty years' experience as a teacher, I express the firm belief that this will seriously deteriorate the student's knowledge of anatomy. I think the present arrangement, under which the subject of anatomy is broken up, is a very good one, because it divides the student's work fairly equally between the four years. If you make this alteration it will lighten his first year's work, and you will burden his second year's work. One argument that was used in Committee was that in most of the medical schools' curricula there is only one anatomy examination, but, as I pointed out, the medical student has one year more for his studies than the veterinary student. During his first year it is true he does not study any anatomy and is not expected to pass any examination at the end of it, but after that he has two years before he presents himself for the anatomy examination. Then, finally, I object to this because you are not going to save very much. You are extending the period of the oral examination considerably—doubling it.

The PRESIDENT: We are not going to pay any more.

Sir JOHN M'FADYEAN: Might I ask what is the present period of the oral examination?

The PRESIDENT: From 20 minutes to 30 minutes in the oral.

Sir JOHN M'FADYEAN: And the examiner has to be paid in proportion. You have nearly doubled the time, and I do not think it is adequate. We must not, with

a view to economy, cut down the time of the examiners too much. When you reflect that in this one examination the student is to be tested as to his knowledge of the whole of the anatomy of all the domesticated animals, I think the time allowed is not adequate. For these reasons I move that we make no exception with regard to anatomy, and that we allow the subject to remain at present with one examiner to each part of it.

Mr. McCALL: I second Sir John's proposition.

The PRESIDENT: The proposition before us relates to the deletion practically of the anatomy examination in A, carrying the work on during the first year just as it is at the present time, and holding the examination at the end of the second period of study. Sir John proposes that that portion of this report be deleted.

Mr. BARRETT: How much would be saved, roughly?

The PRESIDENT: Certainly one examiner; in fact, by doing this we utilise one examiner instead of three. That is the total saving.

Sir JOHN M'FADYEAN: That is not quite fair. I take it, what Mr. Barrett wants to know is how much would be saved by adopting the recommendation of the Committee rather than by adopting mine.

The PRESIDENT: We cannot say exactly.

Sir JOHN M'FADYEAN: It is very little. It might be £10 a year.

The PRESIDENT: It is more than that.

Sir JOHN M'FADYEAN: Pardon me. You have extended the time of the oral examination by ten minutes, that is, by one-third, and you have to pay for that.

Sir STEWART STOCKMAN: You are cutting down the time that you take to examine the students in osteology.

Mr. BARRETT: You are giving a man 30 minutes but you are not paying the examiner a higher fee.

Sir JOHN M'FADYEAN: I thought the examiners were paid by time.

The PRESIDENT: No. Per student.

Mr. MULVEY: With a minimum of three guineas.

Sir JOHN M'FADYEAN: You must remember that the anatomy examiner will examine far fewer students than the other examiners.

The PRESIDENT: He will get his minimum.

Prof. SHARE-JONES: What time do you propose to give to anatomy to cover the whole ground?

The PRESIDENT: Three hours written and thirty minutes oral. Practically we have to pay, owing to the paucity of students, three guineas for every day's work for every examiner.

Mr. MCKINNA: I think we ought to look at it from this point of view—that it is only for a very limited time, and if we can save £10 we ought to do so.

Prof. SHARE-JONES: This is an experiment for some specified period.

The PRESIDENT: It is an emergency measure. It is simply to get us over our present financial position.

Sir JOHN M'FADYEAN: Am I right in saying that if this recommendation is carried the examiner in anatomy would be paid at a lower rate per time than the examiner in physiology?

The PRESIDENT: No, they are both the same, as far as I know. They will each get a minimum of three guineas, and we need not talk about maxima when we have only two or three students to examine in each of these Colleges.

Sir JOHN M'FADYEAN: There are considerably more in London and Dublin.

Dr. BRADLEY: Before you put the motion to the meeting, I should like to say that this is a modification of our procedure in examinations that could be discussed at considerable length. I should like to point out that there are two sides to the question, both of which have been ventilated in this room on some former occasions. It appears that the two parties holding the different views will certainly not agree at the present moment, and it appears particularly that they will not agree be-

cause there has been no experience of a possibility of working this method of condensing anatomy, so to speak, into one single subject. May I point out most emphatically, as Mr. McKinna did a few moments ago, that these recommendations are merely a temporary expedient, and that if we adopt this course it at least will show us whether it is practicable. It will show us its merits and, if necessary, its demerits; and for the reason that I feel somewhat strongly on this splitting up of anatomy into what is, according to modern views, an absolutely unnatural division, I think it would be well if the Council were to consider the advisability of at least trying the experiment. I say no more. I simply leave it at that.

Sir STEWART STOCKMAN: I think the strongest argument that has been brought against this is the argument of the student. I hold that if a student attends a set of lectures and does not go up for an examination, he wastes his time in the majority of cases.

Dr. BRADLEY: No.

The PRESIDENT: This is a point that will be brought to light and be emphasised by experience, and it can only be dealt with in that way. As long as the thing is a mystery we can all think as we like.

Sir STEWART STOCKMAN: I do not agree that it will.

The PRESIDENT: It has been so upheld in the medical profession, and it has been found successful, because they have adhered to it. They would have changed it at once and gone back to the two examinations if they thought it was better from the student's point of view.

Mr. McKINNA: We are not committing ourselves to a permanency in this case.

Sir John M'Fadyean's amendment, that the section be deleted from the report, was then put and lost, three voting for.

The resolution that this section stand part of the report was then put and carried—nine voting for and three against.

The remaining recommendation of the Committee, with regard to the Registration Committee, was adopted.

HONOURS AND PRIZES COMMITTEE.

Prof. METTAM read the following report of a meeting of the Committee, held on Thursday, Jan. 6th:

Walley Memorial Trust. The terms of the Walley Memorial Trust Deed were submitted and considered.

It was resolved:—That the Solicitor be requested to give an opinion as to the possibility of the terms of the Deed being altered by consent, so as to provide for the prize to be awarded on similar conditions to the Williams Memorial Prize.

That the Treasurer be authorised to employ the accumulated balance for the purchase of further Stock.

On the motion of Prof. METTAM, seconded by Mr. BANHAM, the report was adopted.

Walley Memorial Prize Awards. The SECRETARY read the following report of the Chairman of the Examiners:—

Dear Sir,

Walley Memorial Prize—Award of Marks.

No.	Pathology.	Material.	Hygiene.	Total.
1.	21½	49	58	128½
3.	46½	51	75	172½
8.	38	61	63	162

The average of the highest is insufficient to award the prize.—yours obediently,

WILLIAM WOODS.

The PRESIDENT: This relates to what we have just dealt with in the report of the Honours and Prizes Committee. It has cost us six guineas to award nothing.

Williams Memorial Prize Award. The SECRETARY read the following report dated 5th January, from

Messrs. Woodhouse and Wilkinson, Chartered Accountants:—

"List of students gaining 60% or more marks in the Final Examination:

Dublin Dec. 1915 J. Mullany 64 61 = 125
Glasgow " A. W. Campbell 60 62 = 122

We certify that the above is a correct statement of the marks obtained by the candidates in the Final Year Examinations during 1915 who obtained sixty per cent. or more marks in the subjects of Veterinary Medicine and Surgery."

NOTICES OF MOTION.

Mr. MULVEY: I beg to give notice: That Bye-law 93 be amended during the continuance of the war by omitting all words after the words 'Final Examination' and adding in their place the word 'before.'

Sir JOHN M'FADYEAN: I beg to give notice of my intention to move the following alterations in Bye-laws at the next Council meeting:—

Bye-law 62. Omit Section (e).

Bye-law 63. Add the above Section 62 (e).

Bye-law 76. Examination B. Omit Section 3.

Examination C. Section 2: In place of "30 minutes" substitute "20 minutes."

Footnote: Omit the words "and shall be examined for 15 minutes by each examiner."

Section 3: Add after "Veterinary Hygiene and Dietetics" the words "Stable Management and Manipulation of Domesticated Animals, and Principles of Shoeing Healthy Animals," and for "15 minutes" substitute "20 minutes."

Bye-law 78: To be suspended.

Bye-law 90: Omit the words "together with an allowance of one guinea per night spent away from home on the business of the examinations."

Those are to give effect to the recommendations of the Retrenchment Committee, with the exception of the one of which I do not approve. I should like to point out, Sir, that it will be necessary to give some instructions with regard to the April Council Meeting. If instructions are not given, the Secretary will in the ordinary course issue invitations to intending examiners to apply, and the applications would be considered and the appointments made at the April Meeting of Council. I assume it will be necessary to instruct the Secretary that advertisements of a modified character are to be inserted. I would suggest, as the plan that would involve the least inconvenience, that, in the event of these recommendations being embodied in the altered Bye-laws, arrangements should be made to elect the new Board of Examiners on the day on which the Council meets to confirm the altered Bye-laws,—that would be some time about the middle of April.

The PRESIDENT: I was going to ask the opinion of the Solicitor with regard to how we should proceed next time—whether it would be possible to take this Special Meeting before we take the ordinary Council Meeting. I do not see any objection to that.

Mr. THATCHER (Solicitor): You could have had the Ordinary Meeting at the time that you have the Confirmatory Meeting. That would answer your purpose.

Sir JOHN M'FADYEAN: The court of new examiners cannot be lawfully appointed under the new conditions until the Bye-laws have been altered. These cannot be altered until the 6th April, and the alterations cannot be confirmed until a subsequent meeting.

The SOLICITOR: Then have the Ordinary Meeting immediately following the Confirmatory Meeting.

Sir JOHN M'FADYEAN: That is my suggestion, that that meeting should be held on the same day, but afterwards. I desire to raise a point *appropos* of these suggested alterations. Is it supposed that we have got the right to alter the systems of examinations with regard to existing students? Is it suggested that the

students in Class A are to be deprived of the right of being examined in anatomy and in osteology next July, and are to be obliged to defer the examination in that subject until next year? I submit they cannot.

Prof. SHARE-JONES: I quite agree.

The SOLICITOR: Why?

Sir JOHN M'FADYEAN: Because you have never before altered the system of examination for a student who has already entered the College. I submit it is unfair.

The SOLICITOR: It is unfair, probably, but the question is whether one has the power to do it. We are all suffering from the effects of the war, and the students will have to do so as well.

Sir JOHN M'FADYEAN: The point which I am submitting is this, that I think there will be students present in Class A who would much prefer to be examined in Anatomy next July, according to the tacit bargain that they have made with this College, because they have entered under published Bye-laws which state that they shall study osteology and the anatomy of joints during the first year, and be examined in that subject at the end of the first year, and now in the middle of the year you propose to go back on it. I am asking the Solicitor whether on these students would have a good case if they demanded to be examined.

The PRESIDENT: Might I ask Sir John if he applies his argument to Class B students in stable management?

Sir JOHN M'FADYEAN: Absolutely.

The PRESIDENT: Then all our work falls to the ground.

Sir JOHN M'FADYEAN: It is much better to raise the point now. I confess I do not want to conceal anything or keep it up my sleeve. It did not occur to me.

The SOLICITOR: Of course I perfectly recognise that the student might have something to complain of, but at the same time, so far as any bargain is concerned, I do not see the bargain. Here are the powers under the Bye-laws which seem to me to be quite clear. I think you can alter these Bye-laws.

Sir JOHN M'FADYEAN: You think we can tear up any of our regulations with regard to the arrangements of the subjects?

The SOLICITOR: Yes.

Sir JOHN M'FADYEAN: Can we extend any of the subjects during the period of the student's curriculum?

The SOLICITOR: Yes, I think so.

Mr. BARRETT: Otherwise we could never amend our Bye-laws.

Sir JOHN M'FADYEAN: But that is not reasonable.

The SOLICITOR: It is not fair, perhaps, but the only question is whether you have power to do it under your Charter, and I think you have.

Sir JOHN M'FADYEAN: What I am really asking is whether the student would have any right in law in contesting the alteration.

Prof. SHARE-JONES: Does not the student, when he registers under the regulations of the Royal College, enter into a contract?

Prof. METTAM: He does not register under the Royal College of Veterinary Surgeons.

Prof. SHARE-JONES: He registers at a school to be taught under the Bye-laws and Regulations governed by the Royal College of Veterinary Surgeons.

Sir JOHN M'FADYEAN: Can you add a year to the curriculum after the student has entered?

Mr. BARRETT: That would be unreasonable.

The SOLICITOR: Let us get at this. Whom is the contract between? The contract is not between this College and the student. The contract is between us and the schools. You have a contract with your students.

Sir JOHN M'FADYEAN: All these regulations with regard to examinations, I submit, are not for the schools. They are as much for the students as for the schools.

They are for the guidance of students, so that they are really, so to speak, a bargain.

The SOLICITOR: I do not recognise that such a bargain cannot be altered, and altered at the instance of this College.

Sir JOHN M'FADYEAN: During the period of the student's curriculum?

The SOLICITOR: I think so. It is a hard thing to say, but I think that is the reading of the Charter.

Sir JOHN M'FADYEAN: Then you do maintain that it would be competent for the Council to extend the period of the curriculum even of a student who has already begun his course?

The SOLICITOR: It is a question that wants study, and should not be answered offhand, as I have to do now. But it seems to me this Charter gives the Council the absolute power to regulate, not only the examinations but the nature and extent of the examination.

Sir JOHN M'FADYEAN: To regulate them from time to time, but not to vary them in the case of the student who has already begun.

The PRESIDENT: I think this question will arise if Sir John puts up any student to enter an action against us. I think it is quite fair and quite legitimate on our part to make these modifications in our curriculum. The Charter is perfectly clear. It gives us power to do it, and we can uphold it in a court of law.

The SOLICITOR: The matter can be raised further at the next meeting of Council, when you meet to discuss the question of the alteration of the Bye-laws. You can raise this as a preliminary objection, that the Council has no right to pass these Bye-laws because it will be a breach of contract. That will be the time to raise it. It will also have this advantage for me, that I promise you that in the meantime I will devote time and attention to the question, which I would rather not answer definitely now, as it has been sprung upon me.

Sir JOHN M'FADYEAN: I should certainly quite seriously represent that all students will claim the right to be examined this year.

The SOLICITOR: That I promise you shall have my best attention between now and the next meeting.

Sir JOHN M'FADYEAN: It is not necessary, Sir, to move any resolution with regard to the points I mentioned. I take it that you will see the necessary arrangements are made?

The PRESIDENT: Yes.

The SECRETARY: For the advertisements?

The PRESIDENT: Yes. After these Bye-laws are confirmed, within a fortnight from the 7th April, we then hold an Ordinary Meeting of Council for the election of the examiners.

Sir JOHN M'FADYEAN: The point is that you have actually to anticipate that the Bye-laws will be altered.

The PRESIDENT: It is quite reasonable to anticipate that, seeing that these have been to-day.

Sir JOHN M'FADYEAN: No, except with regard to one of the recommendations.

The SOLICITOR: I think the advertisements can be so worded as to cover the contingency.

Mr. MULVEY: I beg to give notice of an alteration of Bye-law, namely:—

That Bye-law 76 be amended as follows:—

Examination A. Omit Subject 1.

Examination B. Subject 1 to read:—

"Anatomy of Domesticated Animals, Written 3 hours, Oral 30 minutes."

That Bye-law 61 be altered to read as follows:—

"Anatomy. A course of not less than 50 lectures and 20 hours practical instruction on the Anatomy of the Domesticated Animals."

That the following alterations be made to Schedule II:—

(1) That Subject No. 1 be deleted from Examination A.

(2) That Subject No. 1, Examination B, be made to

read as follows:—1. Anatomy of Domesticated Animals. Candidates will be required to show a knowledge of the Anatomy of Domesticated Animals."

On the Motion of Mr. PRICE, seconded by Mr. McKINNA, a hearty vote of thanks was accorded to the President for his conduct in the chair.

The PRESIDENT: Thank you, gentlemen, for your kind attention.

The meeting then terminated.

PARLIAMENTARY.

In the House of Commons on Thursday, 13th.

The Hon. HEW DALRYMPLE (Wigtownshire), asked the Financial Secretary to the War Office, the number of veterinary officers granted Temporary Commissions since the outbreak of the war who had been promoted to the rank of captain, and the number of veterinary officers granted commissions in the Territorial Forces since the outbreak of the war who had been promoted to the rank of captain, the number of veterinary surgeons offering themselves for commissions and granted the rank of temporary lieutenant in the Regular Army and Territorial Forces, respectively, during the last six months; and whether veterinary surgeons in the Territorial Forces would for the future be granted the same rate of promotion, carrying with it the same rate of pay, as the same officers serving in the Regular Army?

Mr. FORSTER, in reply, said the numbers were, respectively, 118, 4, 148 and 134. It had been decided to promote Territorial Force lieutenants to captains after one year's mobilised service. The rate of pay would be the same as laid down in the pay warrant of Regular officers.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Jan. 14.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temp. Lieuts.:—J. G. Taylor, W. C. H. Steele (Jan. 1); S. J. Motton, F.R.C.V.S. (Jan. 3); W. Hill, J. B. Mackie (Jan. 4).

Jan. 17.

Major to be temp. Lieut.-Col.:—J. J. Aitken (Dec. 14).

To be temp. Lieuts.:—A. W. Campbell (Jan. 5); S. T. Jackson, B. Wittam (Jan. 7).

Jan. 18.

Temp. Lieuts. to be temp. Capts.:—C. E. Huston, C. H. Cordy (Jan. 1); J. M. Whyte (Jan. 4).

To be temp. Lieut.:—E. J. B. Sewell (Jan. 7).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Jan. 15.

To be Lieut.:—J. A. McLauchlan (Jan. 16).

Jan. 18.

To be Lieut.:—R. H. Penhale (Jan. 19).

Jan. 19.

To be temp. Lieuts.:—A. Gofton, F.R.C.V.S. (Jan. 5); T. D. M. Martin (Jan. 6).

SPECIAL RESERVE OF OFFICERS.

Jan. 15.

Lieut. (on prob.) M. Glynn is confirmed in his rank.

Jan. 19.

To be Lieut. (on prob.):—R. R. Dalling (Jan. 6).

PROMOTIONS AND APPOINTMENTS.

The King has been graciously pleased to give directions for the following promotions in and appointments to, the Most Distinguished Order of Saint Michael and Saint George, for services rendered in connexion with Military Operations in the Field, to be dated the 1st January, 1916:—

C.M.G., ADDITIONAL MEMBERS.

Maj. (temp. Lt.-Col.) Robert Houston Holmes, F.R.C.V.S.

Maj. Arthur Olver, F.R.C.V.S.

Maj. Frederick Charles O'Rorke, F.R.C.V.S.

The King has been graciously pleased to approve of the undermentioned Honours and Rewards for distinguished service in the Field, with effect from 1st January, 1916, inclusive:—

D.S.O.—To be Companions:—

Maj. Kenneth McLeod McKenzie.

Maj. Henry Samuel Mosley.

Maj. Edward John Wadley.

Capt. (temp. Maj.) Joseph Abson, F.R.C.V.S. (T.F.)

DISTINGUISHED CONDUCT MEDAL.

Temp. Sgt.-Maj. W. H. A. Field, 198 (T.F.)

Sgt. N. Mapham, 21 (T.F.)

Temp. Sgt.-Maj. S. Salt, 84.

Temp. Sgt.-Maj. J. E. Trevor, 294.

THE MILITARY CROSS.

Capt. (temp. Maj.) Arthur Bowman Mattinson, F.R.C.V.S. (S.R.)

Temp. Lieut. William Brennan De Vine.

Capt. Thomas Charles Evans, Canadian A.V.C.

The following casualty in the Expeditionary Force is reported:—

DIED—Shoeing Smith A. Weston, 2006.

The following casualty in the Mediterranean Expeditionary Force is reported:—

DIED—Pte. W. Hodges, 5434.

Extract from *London Gazette*, 18 Jan.:

Special Res. of Officers—Artillery. To be Sec. Lieut. (on prob.), R.G.A.:—G. R. Thatcher (Jan. 13).

Mr. G. R. Thatcher is junior member of the firm of Geo. Thatcher & Son, Solicitors to the Royal College of Veterinary Surgeons.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations to the College funds:—

Mr. W. J. Mulvey, London	1916	£1	1	0
Mr. G. H. Williams, Chippenham	1916	1	1	0
Mr. J. F. D. Tutt, Winchester	1916	1	1	0
Mr. P. G. Bond, Plymouth				
	1914, 1915, 1916	3	3	0
		£6	6	0

On the re-opening of the Royal Veterinary College of Ireland, in October, 1914, after the Summer vacation, the Students opened a subscription list to provide smokes for the men in the A.V.C. on active service. Since that date the following sums have been sent to the Tobacco Fund of the *Weekly Despatch*, to send out their packets of cigarettes and tobacco:—

Nov., 1914	£5	0	0
Dec., 1914	6	4	0
Mar., 1915	1	6	0
July, 1915	£2	15	0
Nov., 1915	1	10	0

Highland and Agricultural Society and Dick College.

At a meeting of the directors of the Highland and Agricultural Society on Wednesday, 12th inst., Dr. Wilson, of Carbeth, moved the adoption of a minute of the Finance Committee, to whom the application for a grant to the Building Fund of the new Royal (Dick) Veterinary College had been remitted at last meeting. The minute bore that the Committee had considered Professor Rankine's letter, but could not see their way to recommend the Board to make a further grant at the present time. There seemed to be no hope of bringing the new building to such a state of completion as would make it suitable for students. Any subscriptions given after the war would be of far greater benefit than the same amount given now. The arrangement presently in force, under which students were being trained in the old buildings, might be continued until the conclusion of the present abnormal conditions. Dr. Wilson remarked that a sum of £10,000 was required to complete the new buildings, and of that sum £5000 was promised from public funds on condition that an equal sum was raised locally. He did not think anyone would suggest that that Society should subscribe £5000, yet it seemed hopeless to expect that a less sum would suffice. It was not a popular thing to carry on a building at present, and he did not think they should do anything to encourage the completion of the building under the existing conditions. He therefore moved the adoption of the minute that no grant should be given under the present abnormal circumstances. The resolution was subsequently confirmed by the general meeting.—*The Scottish Farmer*.

PERSIFLAGE.

You have complained often about the paucity of material for your columns, more especially clinical papers. No enquiries have brought to light the causes. Suggestions have been made such as (1) The keeping of a diary, and (2) veterinary meetings; but neither has made any improvement.

Diary keeping becomes tedious and veterinary meetings early bore one. In any event neither remedy could do any good, for the cause lies deeper by far than both. Possibly it is due to lack of early culture (should it start with a K?) in giving expression to one's experience. It would seem that most of us are drawn from a system of education steeped in dogma and flourishing on cramming. It knows not failure, admits no disappointments, and never requires the exercise of thought.

Thought is the least used commodity in all systems of education. Hence few of us dare to say we have made mistakes—possibly more of these than anything else. So clinical papers mature but rarely, for to be of value they must portray our failures, difficulties and disappointments.

An old member was wont to say that none of us knew anything till we had planted a ten-acre field choke full of our patients. How many would to admit doing so? How many ever do admit it even to themselves? Listen to the conversations usually indulged in when two or three members get together. Of the elect you are not, if the truth were known—if you told it to this galaxy of talent you would prove yourself naught but a duffer. How could you?

And after years of private practice a great chance arose and one grasped it eagerly. At last clients were no more—competition was eliminated—your patients were known to you before sickness intervened. At last you were free to exercise yourself rationally in the discharge of your lawful and legitimate calling. So it seemed in August, 1914, but alas "it's a long way to go" for a haven of this kind to be reached. One fondly dreamed that no more would we worship the fetish of a *dicta ex cathedra*. The Army was precise—very—it required names for everything—it required explanations to all sorts of people.

Clients gone! Good God, they were multiplied ten-fold; from the rawest of raw subs. to brigadiers *et hoc genus omne*.

They flocked around you, A.D.V.S.'s included. Dare you go on your own line? Never! The colonel's groom had never done so, and his vet. at home was a wonderful man. Hadn't he stuck a tube into the belly of his favourite hunter and lit a blue flame up at the outward end? Eureka: but he was a vet!

What documents emanated from General Headquarter's offices, from Brigade Headquarters, and from Regimental Headquarters! They were legion. Humorous—pathetic—ludicrous.

The horse was a new species of animal recently discovered, and one had to be instructed in all that appertained to him. And instructions were more or less double-edged in many cases, and not seldom contradictory: but we have had a glorious time—and survived. At last we have seen ringworm, mange, strangles, 'flu, catarrh, coughs, colics, grease, mudrash, quittor, laminitis, thrush, corns, suppuration in the foot—all of them ancient diseases that one has read about in disused books. Some patients in sheer amazement have performed *hari-kari* in water, by rope and on pimps. But we still live; and the profession, praise the powers, still exists. What we would have done or become without the war heaven alone knows. We are saved! You didn't know it? Then you haven't been in the Army. Join up at once, and you'll soon find out all about it. Do not miss this the very last chance of being in. Hurry up! Hurry up! Hurry up!

CIVIL VET. SURGEONS AND ARMY PRACTICE.

Sir,—In your report of the Quarterly Meeting of Council on the 7th inst., Messrs. Banham, Mulvey and the President all spoke of the advantages which they considered would come from the employment of local civil veterinary surgeons for the troops in the neighbourhood of such veterinary surgeons. This is undoubtedly true from the point of view of the civil veterinary surgeons in question, who thus draw pay from the Military Authorities—pay, I might add, on a higher scale than that offered to the officers A.V.C.—and at the same time look after their own practices.

The opinion of a good many veterinary officers of both Territorials and the New Armies is that this is a great inducement to men to remain at home, who are quite eligible to accept commissions; thus not only adding to their income in this way, but also, they fear, in a good many cases by skimming the cream of the practices of their more patriotic neighbours, who have gone to serve their country and left their practices in the hands of more or less incompetent assistants, or entirely unattended.—Yours truly.

A.V.C. (T.)

THE FINANCES OF THE R.C.V.S.

To those interested in the welfare of the R.C.V.S. the report submitted by the Treasurer at the recent meeting of Council is sad reading, and one reads with mingled feelings of pleasure and sadness that retrenchment in expenses is anticipated. It seems to me to be a very great pity to have to curtail or modify in any manner the examinations.

The subjects of Stable Management, Horse Shoeing, and Hygiene are well worthy of a longer oral examination than twenty minutes. The present writer has seen a candidate take more than ten minutes to harness a horse. The Council is certainly doing wrong in proposing to modify the examinations, and one cannot quite conceive wherein the element of economy comes.

It seems to me that it would be much preferable to register students and make them pay half-a-guinea per annum to the R.C.V.S., and make members pay a guinea.

Fellows should pay nothing per annum, as most of them have already paid a sufficient sum to be examined. One notices with a considerable amount of pride that in the recent list of military honours that most of our honoured colleagues possess the higher diploma, and it is gratifying that the War Office recognises this and puts the qualifications after their names in *The London Gazette*.

More men should go up for the Fellowship diploma. Besides the good knowledge obtained by the extra study, candidates also help the Royal College financially.

All sorts of arguments are raised against the Fellowship. Some say it is of no pecuniary advantage (not true in

writer's experience), and others that holders of it do not possess any privileges beyond those of Members—but this is not true, as Fellows only can be examiners (in veterinary subjects). One hopes than the R.C.V.S. will adhere to this rule strictly when examiners for the new F.R.C.V.S. and D.V.S.M. are appointed. Those in the public service have stated that their seniors have not considered it worth the trouble to try and obtain the higher diploma (there is always a risk of being rejected), and others point to the Principals of the various Colleges as men who have succeeded without it.

The Royal College needs funds, and we who are qualified must help to supply them—and how best this can be done is a grave problem. As practitioners we are not making any cash out of the war, in fact, many of us have very little to do.

Whole time officials are being kept busier than usual and new duties are being placed in their charge with no extra remuneration.

There seems to be no valid reason why the library of the R.C.V.S. is not a circulating one. The present writer is perfectly willing to pay an annual subscription, and pay the postage both ways of books borrowed. For the proposed fee from students before mentioned, they should have the privilege of borrowing books.

"DUNEDIN"

THE CAR LICENCE TAX.

Sir,—I enclose you a letter showing you the view the Norfolk Local Taxation Licence Department take of the clause added to the Finance Act.—Yours truly,

M. BRAY.

Docking, King's Lynn.

NORFOLK COUNTY COUNCIL.

The Shirehouse, Norwich,

12th January, 1916.

Dear Sir,—In reply to your letter of 11th inst., I beg to enclose Declaration as you request. I would point out, however, that under the Finance Act, 1915, Veterinary Surgeons were granted the same concession in reference to the rebate of 50% on the duty on *Motor Spirit*, but were not granted the concession in reference to Local Taxation Licence. However, if you can give me proof that this latter concession was also granted I shall be pleased to put any application you may care to make before my Committee for their consideration.—Yours faithfully,

L. E. TINDALL,

Local Taxation Officer.

Writing on the same question, Mr. C. H. Delacherois says:—"The Somerset Local Taxation 'Controller' says it does not apply to motor car licences."

KENT COUNTY COUNCIL.

Maidstone,

18th January, 1916.

Sir,

Local Taxation Licences.

Referring to your letter of the 15th instant, I beg to inform you that the Motor Car Licences at half rates are issued to duly qualified medical practitioners only.

I am, Sir, your obedient Servant,

EDWARD J. MARVIN, Controller.

Mr. C. Morgan, M.B.C.V.S.,
Nonington, Dover.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
G. BRITAIN.											
Week ended Jan. 15	17	19			1	3	112	321	20	66	238
Corresponding week in											
1915 ...	17	18				2	†	†	11	77	296
1914 ...	20	22			1	2	89	152	14	45	273
1913 ...	11	13			3	12	88	198	12	34	247
Total for 3 weeks, 1916	44	46			2	8	298	848	59	233	731
Corresponding period in											
1915 ...	58	64			2	4	†	†	52	260	1172
1914 ...	62	68			6	22	227	440	32	136	1160
1913 ...	38	48			11	51	256	610	38	107	1620

† The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, Jan. 18, 1916

† Counties affected, animals attacked:—
Stafford 3.

IRELAND.	Week ended Jan. 15	...	...	...	...	...	Outbreaks	1	17	2	...
Corresponding Week in											
1915 ...	...	...	...	...	...	...	...	...	16	5	23
1914 ...	...	...	...	...	...	...	...	2	13	3	4
1913 ...	...	...	...	...	...	...	...	8	14	4	8
Total for 3 weeks, 1916	...	1	5	...	...	...	...	5	44	11	29
Corresponding period in											
1915 ...	...	...	...	...	...	...	...	2	40	10	52
1914 ...	...	...	...	...	...	...	...	4	40	6	30
1913 ...	...	...	...	...	...	...	...	29	45	18	85

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Jan. 17, 1916
NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1438

JANUARY 29, 1916.

VOL. XXVIII.

ECONOMY AND THE REGISTRATION COMMITTEE.

Among its retrenchments, the Council has decided that the Registration Committee shall "exercise every possible economy" in almost the whole of its work. The chief and most serious effect of this will be to reduce the efforts of the Council in the prosecution of unqualified practitioners who transgress the Act. Prosecutions which are possible may not always be entered upon; and, in those numerous cases in which further evidence is required before prosecuting, little if any expense can be incurred. Also, it will be necessary to avoid appeal cases as far as possible. As a result, unqualified men will be able to practise with less fear of interference than they have had since the passing of the Act.

It is peculiarly unfortunate that this should have become necessary just now. The dearth of veterinary surgeons in civil life offers unqualified men great opportunities of increasing their practices, and many of them are doing so. We cannot wonder that the public employ them largely; and, of course, unqualified practice is quite legal so long as it is not represented as qualified. But many unqualified men can only be deterred from posing as qualified by strong action on the part of the Council; and that action must be relaxed now just when it is most needed. Let us admit that the economy is necessary, but none the less it is regrettable.

SOCIETIES' MEETINGS.

The meeting of the Central Society reported in this issue forms an interesting object lesson. Of course, far fewer members were present than in normal times; but the evening was spent in discussing post-mortem specimens and interesting cases, and the main item on the agenda was never reached. The subjects discussed were very varied, and the report as a whole will interest every clinician; and yet there is little in it going far outside ordinary clinical experience. Interesting cases picked from the daily routine of busy practitioners!—and hundreds of practitioners in the kingdom could relate others just as interesting. This proves a truth which has been pointed out before—that, whenever even a very few men in practice meet together, they need never lack material for discussion. A set paper is not a necessity; the everyday work of the members will suffice. Apart altogether from its intrinsic worth, this discussion shows the amount of good our Societies' meetings can still do—if we will continue to hold them.

A CONTRAST.

The account of the opening of new college buildings and equipment at Lahore, which we reprint this week, with the sketch of the origin and development of the work is further testimony of the value of veterinary work to the state; and one cannot but contrast the appreciation of this service in our Colonies and India with the fruitless endeavour made by the profession in this country for several years past to obtain the power to tax ourselves for the maintenance of the Royal College.

CLINICAL NOTES TAKEN IN FRANCE.

TETANUS.

By P. A. WILKS, M.R.C.V.S., B.S.C.

I only saw five cases of tetanus, and of these four recovered. I will describe the worst case. The treatment was identical in all four.

He was a black Shire gelding, one of a magnificent pair. The wound of infection was a three-cornered tear on the quarter, which I foolishly stitched. The driver was a Welshman who loved his horses, and he wept indeed at the thought of losing one. He was very bad, and I really had not the slightest hope of saving him. As we were apparently fixed for some time I decided on an experiment. One evening I was in the pharmacy of my French friend, and casually glancing over the shelves I saw a bottle containing Molybdate of Ammonia, a drug I had not seen or thought of since old laboratory days at University College. I asked my friend what he used it for; his reply was that he did not use it, but that it had been bought by his father or grandfather, he was not sure which, and had been there ever since. I offered to buy it, but he insisted upon presenting me with it. I can only call my treatment "Wallis Hoareian," (I apologise, Mr. Hoare, but I think you will accept the compliment later). My method was this: I opened the left jugular with a scalpel and took two litres of blood away. Intravenously, I slowly introduced three litres of sterilised water at the temperature of 100° F., containing half a gramme each of Molybdate of ammonia, Biniiodide of mercury and Iodide of potash. The way I introduced the fluid was simple: a teat tube that I borrowed, some rubber tubing from a motor cycle that I stole, and an enamel jug that I bought. After taking the blood, I simply introduced the syphon with the fluid running, and I arranged it so that it took fifteen minutes for the three litres to enter. This I did twice a day. After the second time the spasms were distinctly less, and on the fourth day had

almost completely disappeared, and the animal taking ample food. Now I don't say it was the Molybdate of ammonia. It may have been either of the other drugs, or it may simply have been the result of the blood being washed.

Those are the facts, and I am anxiously waiting to be able to make another trial. My only thought was, no drug that I know of is of any use; perhaps one of which I know nothing may be. Only one of the cases went down, but after a few doses of Strychnine he got up and did well. I think I may say I saved the War Department £250.

I have many notes on skin troubles, but I think the matter has been well threshed out. One little episode occurs to my mind. There was a small outbreak, and one gentleman came down and said "mange," and then one greater than he, speaking *ex cathedra*, said "lice," and I? Well, in the meantime, with the help of my French friend and a microscope, I had found "tinea." I dutifully evacuated them, so everyone was satisfied—anyhow, with themselves. After discussing the matter one evening with my Frenchman, he said, "Vraiment, ils sont droles, les Anglais," then, after a pause, a little whimsically, and as if half regretting the fact, "quelquefois."

I feel sure of my ground in saying that the inexorable law, that the fittest should survive, worked to its inevitable end, and that those units that went through the fire (and water) in the centre of France were among those that, during the next year, showed the smallest percentage of loss and incidentally got the best reports.

In conclusion, I beg, in a humble way, to pay a small tribute to the work of the Army Veterinary Service in France. To those outside, the difficulties encountered, especially at the beginning, are almost unimaginable. But I am certain of this, that if the spirit of the instructions given as to the quick isolation and evacuation are strictly carried out, no other system could obtain better results.

INTUSSUSCEPTION IN THE HORSE.

Subject. A cart gelding, age six, belonging to a market gardener. Horse of heavy vanner type. Had done well since purchase; was a good worker, quiet and temperate in all harness. Had no illness prior to its last, and was in a very fair condition.

It was sent to town twice a week after a load of stable manure, it was the shaft horse, had a careful driver, and a man accustomed to horses.

On its return with its last load it showed slight abdominal pain on being let out of harness, thought to have colic; a draught was given. It got easier and was left for the night. Next morning it failed in its appetite, although it had eaten its night feed. I then saw it for the first time; gave it a dose of aperient medicine and left some fever mixture.

The condition of the animal's temperature 102, rather cold at the extremities, ears and legs; breathing rather short, no cough, no sweating, and not very restless; occasionally lay down. These symp-

toms continued for a few days. It walked very slowly when led out, and was stiff in the hind quarters; the flank drawn up, with a wasting of the loins. It ceased feeding altogether, but would drink heartily.

After a day or two a fetid odour from the mouth and a peculiar gurgling sound heard at the base of the neck in front, not like the sound of pericarditis. There was no "tinkling" sound.

My diagnosis was abscess in the abdominal cavity due to external injury.

Prognosis unfavourable. Patient gradually wasted. It passed at times some loose faeces. No violent purging. Micturition normal. Marked feature of the case—the wasting, and the very slow movement in walking, with a rambling gait.

Illness lasted about ten days. Owner sending in word now and then that he thought horse was better. The fetid odour from the mouth continued nearly the whole of the time, and towards the end was very offensive.

Seeing recovery hopeless, had the animal destroyed. Post-mortem examination showed intussusception of the caecum within the large colon. The whole of the caecum was drawn in, and between the walls of the two bowels there was about a gallon of pus. The caecum was turned inside out, as it were, within the colon.

The injury was due, in my opinion, to a kick or a blow on the abdominal walls received on the near side. I have never previously seen anything like it. I have not seen a case recorded. How is a V.S. to diagnose a case of the kind? Recovery was impossible.

The case may interest some of your readers.

Plymouth.

P. G. B.

LOW RINGBONE.

I was much interested in Mr. Western's account (published in *The Veterinary Record* on Nov. 20th), of a cart mare which he had diagnosed as suffering from low ringbone, and a photo. of the case which accompanied it.

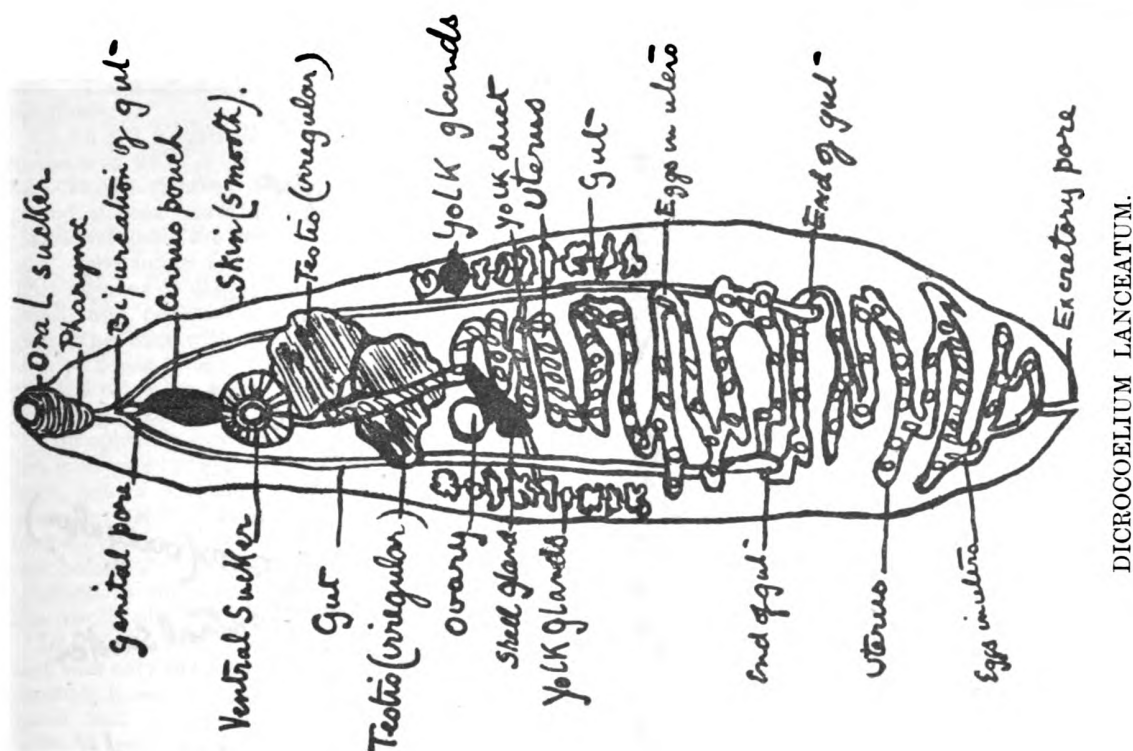
By low ringbone I conclude Mr. Western means ringbone affecting the pyramidal process of the pedal bone.

At the meeting of the National Veterinary Society held at Manchester, in July, 1912, the late Mr. W. Hunting read a most interesting and instructive paper on ringbone, and an equally interesting and instructive discussion was opened by Professor Macqueen. During the discussion a well known member of the profession, who has probably made more post-mortems on horses' feet than any man in the British Isles, denied absolutely that low ringbone ever occurred, except from some accident, *e.g.*, a wheel of a gun passing over a horse's foot. No one at the meeting contradicted this statement.

I should like very much to know if Mr. Western confirmed his diagnosis by a post-mortem examination.

GRAHAM REES-MOGG, F.R.C.V.S.

B.E.F., Jan. 5.



TWO TREMATODES: *DICROCOELIUM LANCEATUM* AND
EURYTREMA PANCREATICUM.

The object of this article is not to describe the two trematodes, but simply to demonstrate their shape as seen under camera lucida, and to show the situations of the important internal organs.

The diagrams are drawn by myself from prepared slides.

For the description of these trematodes readers should refer to the recent text books on Veterinary helminthology.

"*Dicrocoelium lanceatum*" (Stiles & Hassall).

"*Eurytrema pancreaticum*" (Raillet).

CLASSIFICATION.

Order, *Trematoda*.

Family, *Fasciolidae*, Characters unisexual, two suckers, oral and ventral.

Sub-family, *Dicrocoelinae*, Characters Yolk glands are situated in middle third of body, and the ovary is situated behind the testes.

Genera 1. *Dicrocoelium*, with elongated body and testes diagonal.

2. *Eurytrema*, with broad body, testes connubial and widely separated, and possess a tail.

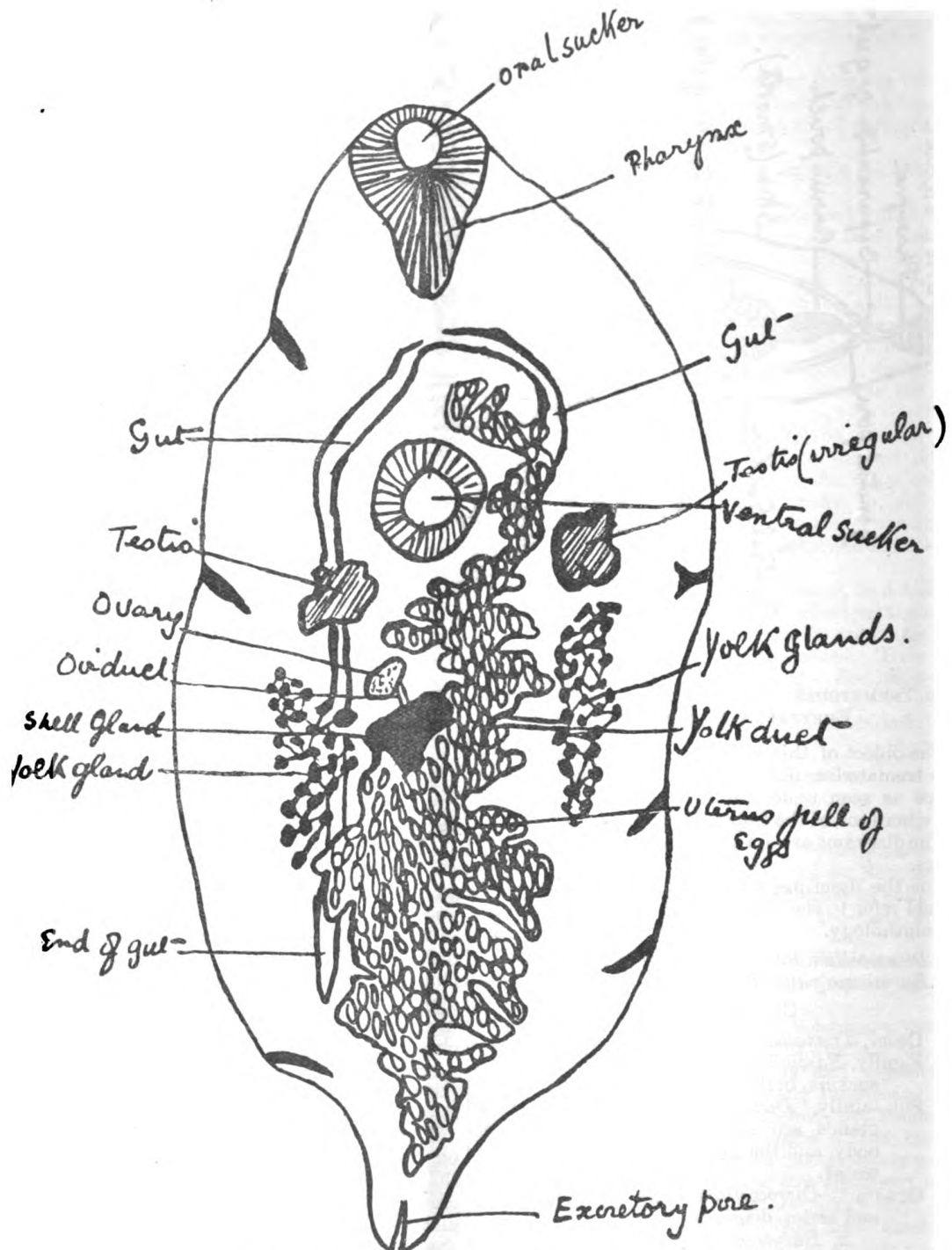
Wm. P. B. BEAL,
Vety. Officer, Gold Coast Colony, W. Africa.

ABSTRACTS FROM FOREIGN JOURNALS.

GLANDERS IN AUSTRIA FROM 1910 TO 1913.

J. Schnurer has published an account of the results obtained against glanders in Austria from 1910 to 1913 (*Weiner Tier. Woch.*). In this country, since 1910, all the horses not belonging to the army which were suspected of glanders were subjected at the same time to the agglutination test and the ophthalmic mallein test, with the exception of horses which, although suspected of glanders, did not show any clinical symptoms of the disease, and which were subjected to the ophthalmic test alone. Horses belonging to the Army were tested more rigorously; and in them, in both the instances cited above, both the tests were applied. All the remounts which annually come into the regiments (about 11,000 horses) were subjected to the ophthalmic test.

During these years 4683 blood tests were carried out upon a total of 2966 horses, and 93,352 ophthalmo-reactions upon 76,220 horses. It was necessary to destroy 341 horses because they were glandered; in 303 of these (= 88.8%) the ophthalmo-reaction had given positive results, while in 26 cases (= 7.6%) the result was doubtful, and only in 12 cases (= 3.5%) it was negative. By taking into account those cases in which the ophthalmo-reaction was repeated to obtain a definite response, the



EURYTREMA PANCREATICUM.

percentage of accurate results reaches 96.4%. The remainder of the horses (3.5%) which gave negative results could be recognised as glandered by the subcutaneous mallein test and by the agglutination test. The method adopted has therefore been very satisfactory.

Of 75,879 apparently healthy horses submitted to the test, 249 (= 0.34%) gave positive reactions, and 74,512 (99.6%) negative ones. In all this period of four years 25 horses were destroyed as glandered upon the results of the ophthalmic test and were found on post-mortem to be healthy. This number of diagnostic errors is certainly very small, and becomes reduced as the veterinarians gain experience with the ophthalmo-reaction. Fifteen of these twenty-five errors occurred in 1910, and the other ten were distributed among the three following years.

The ophthalmo-reaction is innocuous, and does not give rise to injurious secondary symptoms—at least, not in sufficient numbers to be taken into account. Of 93,352 tests, only three have been followed by damage to the tested eye. When carried out before the agglutination test, the ophthalmo-reaction, in the author's hands, has not disturbed the results of the subsequent agglutination test.

In the years 1910-1913, the subcutaneous mallein test was only practised in 119 cases, and the author reserves these for a separate report. The agglutination test yielded about 15% of errors. This method seems to be losing its importance; and the author only uses it as a control to the positive ophthalmo-reaction.

An examination of the epidemiological statistics seems at first sight to indicate that the method adopted of recent years has not sensibly diminished the cases of glanders discovered in the country. A detailed examination, however, shows that a high percentage of affected horses has recently been imported from Russia and from Hungary, and also that epidemics of foreign origin, which in former years were only subdued after long months of work, are now successfully stamped out in a few weeks.

This systemic campaign against glanders has led to some interesting observations. It is seen for example, that contagion occurs principally and almost solely by direct contact with a horse affected with "open" glanders lesions. It is also seen that the infection is nearly always imported from abroad; and a strict control of all imported horses, especially at the spring and autumn remounting seasons, is therefore urgently required. The simplicity and rapidity of the ophthalmic mallein test peculiarly adapts it to be of service in this direction.—(*La Clinica Veterinaria*).

W. R. C.

Among the legacies left by the late Mr. R. Barr Smith of Adelaide, South Australia, was £1000 to the Royal Agricultural Society of South Australia, to be invested and the income applied for prizes for best dogs and horses whose tails or ears have not been mutilated.

THE CENTRAL VETERINARY SOCIETY.

(NATIONAL V.M.A.—SOUTHERN BRANCH).

A General Meeting was held at 10 Red Lion Square, London, W.C., on Thursday, January 6th, Mr. W. R. DAVIS, President, occupying the Chair.

The following Fellows signed the attendance book:—Messrs. N. Almond, R. Bennett, J. B. Buxton, F. W. Chamberlain, J. D. Fulton, G. Gordon, W. S. King, J. F. Macdonald, J. W. McIntosh, W. Perryman, S. H. Slocock, and Hugh A. MacCormack (Hon. Sec.). Visitor: Mr. W. Main.

The minutes of the last meeting were taken as read, and confirmed, on the proposition of Mr. Buxton, seconded by Mr. ALMOND.

Letters regretting inability to be present were announced from: Prof. G. H. Wooldridge, Mr. J. Willett, and Capt. F. J. Taylor, who had only just returned from active service in Egypt.

SPECIMENS.

Hypoderma Equi. Mr. J. F. MACDONALD exhibited a specimen of *hypoderma equi* obtained from a Canadian remount. The animal came in with several swellings about the back and shoulders, and eventually one of those suppurated and the larva shown was obtained; the majority of the others dispersed without any supuration. There was nothing very unusual about it, he thought, except that it was in a horse, and it appeared to be an unusual time of the year for it to occur.

The PRESIDENT asked whether there was any difference between the fly causing the condition in horses and that causing it in cattle. The question as to how the grub got into the skin was a rather disputed one. The idea that it was caused by the puncture of the fly was not held by some, while others thought it might actually come through the blood circulation, that the larvae were licked off the legs of the horse and got into the circulation.

Mr. SLOCOCK pointed out that it would go into the stomach in that case.

The PRESIDENT said it went through the stomach.

Mr. ALMOND thought it was rather a far-fetched idea.

Mr. SLOCOCK believed the puncture was direct into the back, and when the flies were about the cattle could be seen racing. If it came through the circulation it would not always have the same location. Probably in the case mentioned the fly mistook the horse for a cow!

Mr. ALMOND said the "Gid" parasite probably reached the brain through the circulation, and the fluke went through the digestive organs.

Curdled Milk. Mr. ALMOND said he had recently had a very exceptional case. A sample of milk was brought, and it was reported that the cow had been perfectly well on the Sunday morning, but at night as soon as the milk was drawn it was curdled. On the following morning he examined the animal and ascertained that the udder on the Sunday morning was very dirty; it was a frosty morning, and the cowman took some ice-cold water and washed the udder, and, judging from what followed, that probably caused the change in the condition of the milk. The udder was never inflamed, and gradually recovered its power of secretion, and the milk returned to its normal condition in about a week or ten days without any treatment except massage.

Hernia in the horse. Mr. J. D. FULTON said he had been asked by Prof. Wooldridge to relate a strange case that he had recently had and which Prof. Wooldridge had seen. The horse belonged to the Army Service Corps at Blackheath; it was being treated for ringworm and had practically recovered. There was a soft swelling about the size of a duck's egg on the side of the horse, very far forward, which he opened with the knife, and to his surprise, out came something resem-

bling a bunch of worms. The mass was pulled out as far as possible and a silk ligature put tightly around. The part was then cut off with scissors, the stump dressed with a weak solution of Tinct. of iodine.

On examination, the structure was found to be mesentery. Prof. Wooldridge was shown the case while on a visit to the veterinary hospital, and was inclined to think it was a ventral hernia.

He said the swelling had no symptom of abscess: it was thought to be a small haematoma.

Inco-ordination in the horse. Mr. CHAMBERLAIN invited opinion on a clinical case in which he was interested. Five weeks ago he had been called in by a Colonel to examine a charger which was his private property. The animal was an extremely good-looking grey, 15.3 hands, seven years old, clean in wind, limb, and eye. It had been purchased about ten months previously for 80 guineas, and had been passed sound. It gave every possible satisfaction for six months, but three months ago was found in the box to be distinctly groggy behind. There was marked inco-ordination of the muscles controlling the hind limbs. It was thought the animal had slipped up during the night, or been cast, and a lengthy rest was allowed, and after three or four weeks he was put at walking exercise. When warmed up he would walk fairly well, but there was still a certain amount of inco-ordination. Later on, when mounted, he would crouch behind in the most exaggerated fashion, and was really an impossible mount. That was his condition when he (Mr. Chamberlain) was called in. There was no flinching of any description on applying pressure to the loins, and he could detect no effusion at the perinaeum, and the test for shivering gave a negative result. There was no sign of dropped hip or any atrophy of the muscles, and no abrasions of any kind. He thought it might be a case of partial paraplegia, with the root of the trouble in the spine itself. He was unable to advise the Colonel to spend any more money on the animal, as he did not think it would ever carry anyone again, and it was concluded that the best thing to do was to cut the loss: the horse had been unworkable for three months. Accordingly the horse was sent to Aldridge's for sale, and he was not surprised to hear a couple of days later that it had been returned. The dealer who bought him had lodged a certificate from a veterinary surgeon to say that the horse was not fit for a day's work. It was taken back, and the Colonel decided to have it shot, but he persuaded the Colonel that the horse might possibly pull a light trap in course of time. He gave the owner a trifling sum for the horse and took him home, and after a little while he went very well in harness and was a really good traveller, except that he was somewhat unsafe going down hills. The possibility of the trouble being in the kidneys could be eliminated. The animal lay down in the stable and got up much better than he was when he saw him first. It appeared to be one of those cases which were known to horse dealers as a "Bobby." What was a "Bobby?" And what was a "Jink-back?" There was no history of previous illness, and the symptoms would lead one to expect a strain. The animal had never been shackled. He still show inco-ordination, which was worse at a walking pace.

Lieut. BENNETT mentioned the case of a pony which showed very similar symptoms, a well-bred pony, about 15 hands, seven years old. One morning it was found very stiff behind, but the stiffness worked off after going about half-a-mile. Next morning there was inco-ordination behind, the animal going in a cat-like way, with its hind part cramped up. There was, in this case, tenderness of the muscles of the loins. He was rested for several weeks and became distinctly better, and was now doing light saddle work. When ridden hard he would be a little stiff next day, but he was gradually improving. There was no history of any

accident. The only thing he could think of was that the animal had hurt itself, when shackled, in getting up.

Mr. PERRYMAN said he had seen injuries to the back, more particularly in cart horses, and had in mind two or three cases that he had had an opportunity of watching through rather lengthy periods. Visits to the knacker's yard ought to teach a great deal with regard to the lumbar vertebrae. It was no uncommon thing to find the third and fourth lumbar vertebrae ankylosed and in some cases with rather big exostoses. In one case he had the animal appeared to have severely injured the vertebrae and was quite unable to move. He advised destruction, because he thought there was probably some fracture of the spine in the region of the loins. The client was obstinate, and the mare was put in slings for four months and gradually got stronger and better, and shortly afterwards went to work again. She always had a certain amount of inco-ordination, but was able to do a moderate amount of work. In another case a mare which had evidently hurt her back also showed a want of co-ordination, but after being out to grass for three or four months she was put to heavy cartage work, which she did for three or four years. In both cases he believed the injury was in the lumbar vertebrae. It was not at all impossible that when an animal went down suddenly there was a certain breaking down of some bony union which set up an inflammatory condition in the region of the nerves, and there were nervous symptoms of injury to the spine. He would like to know whether there was any sign of paralysis of the tail in Mr. Chamberlain's case.

Mr. CHAMBERLAIN: None at all.

Mr. PERRYMAN said he had produced a spine at the Society some years ago in a case of paralysis of the rectum and bladder, and in that case there was a distinct exostosis between the fourth and fifth lumbar vertebrae, and he believed the case originated in some form of injury. With regard to the "Bobby," or "Jinkback," he looked upon such things as being due to distinct injury to the spinal column affecting the nerves in that region. In Mr. Chamberlain's case he believed the animal had been cast, or had slipped in the stable, and there had been an injury to the spinal column. In course of time it would probably greatly recover, although the majority of cases did not pay to keep. It was really astonishing what injuries an animal could sustain and eventually be fit for some kind of work. As to riding, there was more weight directly on the seat of injury, and it was possible the animal would not be suitable for a charger or hack, but for trap work there was every reason to suppose he would do a fair amount of useful work.

The PRESIDENT believed the terms "Bobby" and "Jinkback" were applied to the same thing; dealers applied them to a horse which was a shiverer. He remembered a horse being found dead in a field, and the man saying that he was not a valuable one as he had been a "Bobby" ever since he had come to the place. He had a case a year or two ago of a mare belonging to a farmer. She was a "trapper," 6 years old, and was found one morning in the condition described by Mr. Chamberlain, and he agreed with Mr. Perryman that she had partially dislocated one of the lumbar vertebrae and an inflammatory process had been set up and the spinal nerves affected. He advised keeping the mare in a box for some time. When the weather got better she was turned out, but did not improve, and finally was shot.

Mr. SLOCOCK was inclined to think the injury would be in either the lumbar or anterior sacral region, or where the nerve distribution was to the hind legs. He had seen several such injuries and his experiences showed that very few made perfect recoveries. He anticipated that the horse Mr. Chamberlain had mentioned would always show some effects, though he

might be a useful harness horse. He had known horses which had received such injuries become fit to ride again. He remembered a horse that had always been classified as a "shiverer"; it was quite a good hunter and jumped well in the early part of the day, but could not stand a long day's hunting. Some three or four years ago the Guards' Hunt used to welcome the non-commissioned officers of the regiments stationed at Windsor to hunt with them, and they had a special permit to ride a certain number of young horses. On one occasion he saw a man mounted on a big black horse which was quite a bad shiverer, and he was surprised to see him carry so large a man. There were many shiverers whose weakness could not be attributed to accident—they had been born shiverers. They would be described as a "Bobby-back" or "Jinkback" shiverers. Another term used by dealers was "Kidney-dropper," which he believed was applied to a horse which tired after a bit and broke out into a sweat. He took that to be a case of embolism.

The PRESIDENT believed the French considered the ordinary typical shivering to be due to hydrocephalus.

Mr. PERRYMAN said he had a case of a shiverer that he followed for eleven years, and eventually made a post-mortem. Between the lumbar vertebrae were a number of little spicules of bone. He looked upon that case as local irritation of the nerves as they emerged from the cord.

Mr. CHAMBERLAIN said his case was nothing like a shiverer. He was inclined to eliminate the possibility of ankylosis of the spine, from the fact that the animal lay down and got up so readily, but possibly it was a question of degree. The thought had occurred to him that there might be some exudate or effusion pressing on the cord, in which case there would be the possibility of absorption.

Mr. ALMOND said another feature that ought not to be lost sight of was injury to the symphysis pubis. With regard to Mr. Fulton's case of hernia, he thought probably many surgeons of experience would have suspected a hernia in that situation, because it was not at all uncommon. If a rupture was small it was more often a case of hernia of the omentum than anything else. Similar cases were common in pigs. In the absence of fluid in the swelling it was hardly desirable to cut into it simply because it was oedematous. In any case of an unusual swelling in the neighbourhood of the flank a hernia might be suspected.

The PRESIDENT said one often found haematomata there.

Mr. FULTON said that in his particular case the swelling was towards the chest and high up, and it felt as if there was fluid in it. There was no pain or heat or anything indicating an abscess.

Mr. BUXTON said he had seen the condition described by Mr. Chamberlain very many times in horses which had been receiving bacterial treatment of various kinds. The most interesting from the veterinary point of view was the toxin from the streptococcus of strangles; those toxins almost invariably affected the spinal cord or the nerves emanating from it in that particular region. He had often wondered why it was one did not hear of cases of the kind recorded by clinicians. The condition must occur in practice now and again, and was a thing that caused an enormous amount of trouble in a certain class of animal.

Mr. MCINTOSH thought Mr. Buxton had probably explained the cause of the trouble, in some cases at any rate. A little time ago he had a mare which had this condition supervening on a very severe attack of strangles. It occurred to him at the time that there was possibly an effusion on the spinal cord; and he treated the animal with iodide of potassium, nerve tonics and the application of a blister. The mare was now doing light work, but had not recovered anything

like complete control of her movements behind. He was afraid the condition was now permanent. He had another case of an animal which injured its back permanently by slipping violently backwards when lifting a heavy load. After prolonged rest and the usual treatment he recovered sufficiently to be able to resume partial work, but his action remained groggy and uncertain, and after a little time, as there was no improvement, we disposed of the animal. He had always understood "Jinkback" to be a nervo-muscular affection and he had never yet heard of anyone who had been able to describe its pathology. The President's suggestion of hydrocephalus as a probable cause, he thought very unlikely.

The PRESIDENT said his experience of azoturia was that the muscles which atrophied and had fibrous changes in them were the muscles attached to the patella.

Mr. ALMOND said he had also seen that condition in the muscles of the quarters. Water on the brain would probably affect the front limbs as well as the hind.

The PRESIDENT said the water would be in the cerebral ventricles.

Mr. ALMOND suggested spinal meningitis as another cause.

YEW POISONING.

The PRESIDENT said that he was recently sent for to attend a pony at grass, seven years old, said to be suffering from stoppage. On his arrival the pony was dead. On the previous evening it was seen to be grazing and apparently all right; in the morning it was found lying on its side and pawing with its forefeet, and on attempting to get the animal up it was found to be unable to rise. Shortly afterwards the pawing stopped and the pony lay, as the attendants said, like a dead thing for an hour, and then quietly died. He suspected poisoning, and on examining the field he found in one corner a yew tree, and close to it, in an adjoining garden, there was another yew tree, with its branches overhanging the field. Several twigs were found on the ground, having evidently been bitten off by the pony.

On *post-mortem*, the tongue was found to be dark purple, almost plum-coloured, as also was the conjunctiva. In the stomach a considerable quantity of yew was found. The lesions observed were those of gastro-enteritis; the villous portion of the stomach was bright red. Although the twigs of the female yew were often stated to be non-poisonous, that had been proved not to be the case. Cornevin, however, asserted that the bright green winter needles up to the time that they turned dark green were non-poisonous. He (the President) observed that the needles on the yew trees to which he had referred were dark green in colour. There were two active principles in yew: an acid—acid, and producing gastro-enteritis—and an alkaloid "taxin," the action of which was narcotic. The most susceptible animals were horses and sheep; in them death took place very rapidly as a rule, often within an hour of ingesting the needles. Cattle, pigs, dogs and poultry were also very susceptible. The symptoms varied according to whether the action of the alkaloid or that of the acid contained in the yew predominated. In the former case, death might occur with great suddenness. The animal fell, as if seized with apoplexy, and died in a few minutes. He had seen such a case, in which the horse fell while in the shafts of a cart and died in five minutes. If the course was more prolonged the patient stumbled about, belched—in the case of cattle—and died in convulsions. If the effects of the poisonous acid were more in evidence, there might be noticed choking, vomiting, outflow of saliva, foaming at the mouth, colic, constipation, tympanites, and haematuria.

On *post-mortem*, nothing characteristic might be found if death had been very sudden; otherwise, the

lesions of gastro-enteritis were observed. If there was an opportunity of treating the case, the indications were to give oil as an emollient and laxative, stimulants, and, as a chemical antidote, solution of iodine. Rumenotomy should always be performed if possible. In 1870 it was recorded that 24 horses belonging to French cuirassiers when turned into a park ate some yew, and all died except two. Several other cases were on record—one of a cart horse that ate $\frac{1}{2}$ lb. of yew and died quickly; another of a two-year-old that ate three ounces and died in ten minutes; another, of two foals that were found with weakness, starting eyes, and sweating, and ultimately died; another, of two goats, one of which died, and one of which was cured by rumenotomy; another, of 35 pigs bedded with yew, one being found dead six hours later, and several very sick, some ultimately dying; and another, of three horses turned into a field, all being found dead in three hours. An Edinburgh doctor, who had written a book on yew, which he dedicated to his wife, tried the effect of yew on himself. He made an infusion of yew leaves and found that it had exactly the same kind of effect as digitalis, that is to say, it slowed the heart, raised the blood pressure, and acted as a cardiac tonic. The only part that seemed to be non-poisonous was the mucilaginous stuff surrounding the fruit, and he had known of cases in which children had sucked off the sweet mucilaginous stuff without harm. The female yew was very poisonous, and he believed all the Irish yews were female with one exception. The plant was dioecious—the male flowers being on one tree and the female flowers on another.

The SECRETARY said he was sure there was more yew poisoning than was suspected. He remembered 25 years ago, in Essex, he was called to see some cattle which had been turned into a park. It was a very dry summer, with no feed at all, and 75 cattle had been brought about 70 miles by rail and then turned into the park late in the afternoon. Early next morning over 50 were found to be down. It was noticed that the palings round the yew trees were broken down and twigs bitten off. Out of the 50, 45 died. On *post-mortem*, the most characteristic feature was that the rumen was not red, but quite black and soft—not pappy. One could pull off the mucous membrane like leaves in a book. He had known of a horse in the country which was tied to a fence while the man made a call, and when he came out the horse was dead, having eaten a few twigs of the yew. He had also had numerous cases of yew poisoning in pheasants. The inflammation in pheasants was not so pronounced as in horses and cattle. He had seen children suck off the mucilaginous red pulp from the berries and enjoy it, and birds would feed on the berries. He did not know whether the male yew was more poisonous than the female.

The PRESIDENT said it was a disputed point.

The SECRETARY said he could readily understand the bright young leaves being less poisonous than the dark green older leaves.

Mr. ALMOND said in his experience the mucous membrane of the omasum would always peel off if the animal had been dead any length of time.

Mr. SLOCOCK asked whether there was any explanation why the cut twigs of the yew were so poisonous. It was generally accepted that an animal could eat a fair quantity of the green yew as compared with the cut twigs. In places where the yew twigs were trimmed periodically it was supposed that the twigs which were cut off became very poisonous after four or five hours, and many cases of yew poisoning occurred from eating the cut twigs. A short time ago he had a case of what was believed to be yew poisoning in a cow, which stood in a drowy condition for a period of over 14 days without eating anything. The first thing she ate was a bit of hay put into her mouth, and from that time she

began to recover. She was treated with aperients and stimulants. There was positive proof of the animal having eaten yew.

The PRESIDENT said the cases he had himself seen were cases where the animals had taken the yew off the trees. The effect of taxin was to cause paralysis of the brain, if the animals lived, and they were quite unable to get up. When he referred to rumenotomy he meant emptying the rumen of its contents as well as opening it.

Mr. CHAMBERLAIN said he had seen a case of yew poisoning in a pony. When he got there it was very nearly dead, and he gave a large dose of morphia to relieve it. On making a post-mortem he found haemorrhagic enteritis.

Mr. BUXTON had seen one or two cases of poisoning by yew in both cattle and horses. The haemorrhagic extravasations were nearly always constant in the whole of the intestinal tract, and he believed they were more marked in horses than in cattle.

Mr. MCINTOSH said his experience was, that once symptoms of yew poisoning set in, death was extremely rapid, so rapid that one was inclined to consider the case suspicious of anthrax. Brain symptoms, extreme tympany, and probably a certain amount of blood exuding from the mouth and rectum were very suspicious. He had never met with a case in the horse, and he always understood the horse very seldom ate yew.

The PRESIDENT thought the appearance of the tongue was wonderfully characteristic; it was blood-red, like that of an animal that had died from suffocation.

SKIN PARASITES.

Mr. SLOCOCK said he had been much interested in Mr. Chamberlain's paper on parasites. Like Mr. Chamberlain, he was engaged a good deal with military horses and was troubled with mange. Sulphur was advocated very largely as a dressing, and he wished to give an experience of its use. He took out one horse from a lot with psoroptic mange which had not been treated and put the animal in the isolation stable with other mange cases. No local dressing was applied, but he gave the horse $\frac{1}{2}$ -oz. of sublimated sulphur in the morning and at night in its food for about a month, and the horse was cured except in so far as symbiotic itch was concerned. There were lesions about the legs which might have been, but probably were not, psoroptic. He had the legs dressed and there was no trouble in curing them. He had sent the mare away with a batch to a remount depot and she looked one of the brightest and best animals sent away.

Mr. ALMOND asked whether the organism had been separated from the skin in the diagnosis.

Mr. SLOCOCK: Yes.

The hour for closing the meeting having arrived, the item of "Impromptu Discussion" on the agenda was not proceeded with.

A vote of thanks to the Chairman concluded the meeting.

HUGH A. MACCORMACK, Hon. Sec.

NORTH OF IRELAND VETERINARY MEDICAL ASSOCIATION.

[NATIONAL V.M.A. IRISH BRANCH.]

A General Meeting was held at the City Abattoir, Belfast, on Friday evening, 17th December, 1915, at 7.30 p.m.

Mr. W. C. M. SMYTH (President) occupied the Chair, and there were also present:—Messrs. A. M. Creighton, J. Ewing Johnston, Howard McConnell, John McLean, R. W. Thompson, W. P. Walsh, and the Hon. Secretary, J. A. Jordan.

Apologies for unavoidable absence were received from:—Messrs. James McKenny, J. J. Ross, John Loughran, J.P., and James Mark.

The minutes of the previous meeting were read, adopted, and signed by the President.

ANGLO-FRANCO-BELGIAN VETERINARY RELIEF FUND.

The HON. SEC. read a circular letter on this subject, which he had received, and it was unanimously agreed on the proposition of Mr. J. Ewing Johnston, and seconded by Mr. John McLean, that a sum of £5 5s. 0d. be forwarded to the British Committee in the name of the Association.

THE LATE PROFESSOR MCCALL.

Mr. HOWARD MCCONNELL, in referring to the death of Professor McCall, said that in no part of the British Isles was he held in greater veneration than in the North of Ireland. He ventured to say that the great majority of the veterinary surgeons practising there had received their early professional training under his able and careful tuition. The profession could ill afford the loss of such a "Grand old man." He moved that a vote of condolence be forwarded to the late Professor's widow and family in their sad bereavement. Mr. A. M. Creighton having seconded, the resolution was passed *sub silentio*.

The Hon. Sec. was also requested to forward a letter to Mr. John Holland, Athy, Co. Kildare, expressing the appreciation of the members of the North of Ireland Veterinary Medical Association for the action he had taken in bringing about a reduction in the petrol tax to veterinary surgeons.

The Hon. Sec. submitted an interesting specimen of tuberculosis of the spinal cord.

Mr. R. W. THOMPSON, Lurgan, kindly consented to read a paper on "Milk Fever," at next meeting.

A general discussion having taken place, those present partook of refreshments, after which the usual votes of thanks were passed, which concluded the meeting.

J. A. JORDAN, Hon. Secretary.

VICTORIA VETERINARY BENEVOLENT FUND.

QUARTERLY MEETING.

The Quarterly Meeting of Council of the Fund was held at 10 Red Lion Square, London, on Thursday, January 6th, at 5 o'clock. There were present:—The President (Mr. S. H. Slocock), in the chair, Messrs. N. Almond, G. A. Banham, W. Freeman Barrett, P. J. Howard, H. Sumner, E. Alfred West, and the Secretary (Mr. W. Shipley).

Apologies for absence were received and read from Mr. F. L. Gooch and Mr. S. Wharam.

The minutes of the previous meeting having been taken as read, were signed by the President.

SECRETARY'S QUARTERLY REPORT.

In presenting my quarterly report I would refer to the fact that the election of Lawrence B. Fars to the London Orphan School takes place on Monday, January 24th. Every effort has been made to secure his election, and, should any member of our Council be able to obtain votes, I shall be glad to have them.

I have had four fresh applications for relief during the last quarter, two of which I cannot recommend for your consideration.

There was an application, remitted to us from the last Council meeting, Mrs. Johnstone, introduced by Mr. Garnett. After considerable difficulty I have been able to obtain all the necessary information in this case. This seems to me to be a particularly sad case. The widow of an Army Veterinary Officer, buffeted about

in the world under very sad circumstances, and having no knowledge of the existence of the Fund. She is now 65 years of age, and I feel it should be a source of gratification to us to be able to help her. The papers are before you for consideration, and I would recommend a grant be made to her of ten shillings per week.

It occurs to me that it is most important that every subscriber to the Fund should make its existence known to the lady members of their family. It is a source of great surprise to me to find how few of them know of the work we are trying to do, and how frequently applicants come as a last resource for the little help we are able to give willingly, if only we knew of the conditions under which they exist.

A further application has been received from Mrs. Marshall. I have obtained all the information I can in this case, and think this is one in which a temporary grant of ten shillings per week should be made for six months, during which time further consideration may be given. Perhaps the financial position of the widow may improve. The papers are before you.

I recommend that the grants to all the old recipients be continued, and that perhaps, in one or two cases, when the funds will permit, certain grants should be increased. I am unable, however, to place you in possession of facts until the presentation of my annual balance sheet.

Financially, I have been able to get over my year with more or less satisfaction, several old subscriptions having been paid, and a few fresh ones obtained.

Subscriptions are now due for the new year, and I trust as many will be paid as possible without appeal, in order to prevent a large expenditure on postage. Many of the subscribers are good enough now to avail themselves of the "Banker's Drafts," which is a source of very great convenience to me, and no trouble to themselves.

I am to-day in receipt of a cablegram that a fund of £66 5s. has been sent from America, to be equally divided between the Victoria Veterinary Benevolent Fund and Mrs. Moore's Army Veterinary Corps Comforts Fund, and signed by Capt. W. L. Little. I am not yet in full possession of particulars, as I am awaiting the mail, but I need hardly to ask you to give me authority to thank the donors when particulars of same are received.

I attach a list of new subscribers and also donations received since last quarterly meeting, Oct. 8th, 1915.

Subscribers.

	£	s.	d.
Barr, Lt. Wm., A.V.C. per Capt. H. Mitton	10	6	
Bennett, Lt. J. W., A.V.C. " "	10	6	
Colhurst, Lt., A.V.C. " "	10	6	
Hirst, Lt. Saml., A.V.C. " "	10	6	
Inglis, T. M., Forfarshire (increase)	1	1	0
Jones, Richd., Towyn (increase)	10	6	
Lomas, Lt. C. K., A.V.C., per Capt. H. Mitton	10	6	
Martin, Jas., Sen. (increase)	10	6	
Pool, W. A., Punjab, Lahore, India	1	1	0
Skelton, Lt. S. H., A.V.C., per Capt. H. Mitton	10	6	
Tipper, L. C., Moseley, Birmingham (incr.)	10	0	
Turner, Lt. P. R., A.V.C.	10	6	
Wilson, P. Lanarkshire	1	1	0

Donations.

Boltons Cinema	3	19	0
Messieux, Miss A. Cassels, Westmoreland	2	6	

After some considerable discussion, it was decided, on the proposition of Mr. E. Alfred West, seconded by Mr. N. Almond, that a grant of ten shillings per week be made to Mrs. Johnstone; and, on the proposition of the President, seconded by Mr. Sumner, that a grant of ten shillings per week be made to Mrs. Marshall. In each

case the Secretary was instructed to report to the Council at the expiration of six months.

It was proposed by Mr. Howard, seconded by Mr. Banham, that all the old grants be continued, and that the Secretary be requested to make further enquiries as to the position of all these recipients, with a view to increasing or discontinuing the grants, as necessary.

The transfer of the name of the Secretary to that of Mr. E. Alfred West, who has kindly undertaken to represent the Fund, and take charge of the Sunday arrangement of the Cinema Fund, was announced. Much gratification was expressed at the splendid help received from this source of income.

PUNJAB VETERINARY COLLEGE AT LAHORE.

OPENING CEREMONY.

His Excellency the Viceroy is fully engaged throughout his short visit to Lahore. On the morning of Friday, Dec. 9, 1915, His Excellency, accompanied by the Lieutenant Governor and their respective staffs, proceeded by motor car from Government House to the new Punjab Veterinary College where he performed the opening ceremony, later fulfilling a similar duty at the Punjab King Edward Memorial Medical College and Hospital.

His Excellency was received by Colonel H. T. Pease, Principal of the College. Sir Valentine Chirol came with the Viceroy. There was a large attendance of officials and raises, including the Judges of the Chief Court, members of the Legislative Council, and the chief officials of the Province. There were also present some 200 students, including about 70 military students in uniform, and civilian students from the U. P., C. P., and Native States, as well as from the Punjab. A procession was formed at the door of the *shamiana* and escorted the Viceroy to the dais:—

The Lieutenant-Governor's Staff,
Col. H. T. Pease, and Mr. C. A. H. Townsend, Director
of Agriculture, Punjab,

The Hon. Mr. C. A. Barron, Chief Secretary, Punjab,
His Excellency's Staff,
His Excellency. The Lieutenant-Governor.

Mr. C. A. H. Townsend introduced to His Excellency the following Professors of the College:—Mr. W. Taylor, Mr. W. A. Pool, Mr. E. Burke, K. B. Sayad Gilani Mahtab Shah, K. S. Sayad Gilani Sardah Shah, K. S. Ghulam Hussain Khan, and K. B. Dr. Amir Shah (retired).

Mr. Townsend read an address to the Viceroy:—

"May it please Your Excellency, It will perhaps be not inappropriate of me, on this occasion of the opening of this fine College, to give a brief history of its career.

The Lahore Veterinary College sprang from a most humble origin. It owes its inception to the late Col. Hallen, C.I.E., a member of the old Indian Veterinary Department, and first Inspector-General of the Civil Veterinary Department. Veterinary work in this country is under very great obligations to him; and Indian animals would doubtless, if they were conscious beings, keep his birthday, as that of one of their greatest benefactors.

Colonel Hallen, as a member of the Cattle Plague Commission, and as General Superintendent of the Horse-Breeding Department, realised the necessity of some institution in India to impart veterinary education. He knew the havoc wrought by cattle plagues; he also knew how much valuable stock in various parts of the country died from curable diseases owing to the absence of proper attention and medicine. Indian cavalry, again, and the Transport Corps had no veterinary service, though their need was imperative. Accord-

ingly, in the late seventies Colonel Hallen, realising that there was no chance that any ambitious scheme for veterinary education would be considered at the start, obtained sanction to the formation of a small class for veterinary instruction at the Hapur Remount Depot in the Meerut District, and persuaded some district officers and cavalry regiments to send men there for training. Two English veterinary officers carried out the teaching work, which was confined to the more common diseases of the horse. The school did useful work. But the decision of Government to close the Remount Depot at Hapur in 1881 reduced the number of animals available for clinical teaching to the students to such an extent that it was obvious that the school must be moved elsewhere if it was to turn out well-trained men. By the orders of the Punjab Government a committee was assembled at Lahore to consider the advisability of opening a veterinary school there. The committee recommended this should be done; and the recommendation was accepted by Government and the Secretary of State. Accordingly the Lahore Veterinary School was opened in an old bungalow in 1882, with Inspecting Veterinary Surgeon Kettlewell as Principal, and Mr. John Burke, who had been teaching (Mr. Burke's son, I should note, is now one of our most esteemed professors here) at Hapur, as Assistant Professor. As regards other teachers in veterinary science, a serious difficulty arose: none were to be had. So recourse was had to the Medical Department, who provided two excellent lecturers: Dr. Rahim Khan, who lectured on *Materia Medica*, and Dr. Amir Shah, who lectured on *Chemistry*. The good work these gentlemen did for many years was, I am glad to say, recognised by Government, both receiving the title of Khan Bahadur. The whole of the students were transferred from Hapur, and the Lahore school was in every way an improvement on that which had existed there. More buildings were gradually acquired or erected; and the number of students steadily increased, those who had gone through the school soon showing their usefulness when they passed on to work in regiments or districts. Mr. Burke retired in 1887, and a graduate of the College, Syed Mahtab Shah Gilani, was appointed demonstrator in anatomy; while in the following year two other graduates of the College, Syed Sardar Shah Gilani and Raja Ghulam Hussain Khan, were appointed hospital assistants at the College. All three of these gentlemen, I am glad to say, are still with us as Professors; most of them have written text-books on their subjects, and the excellent work they have done has been recognised by the grant to all of them of titles by Government.

In 1890, Veterinary Captain Nunn succeeded Colonel Kettlewell as Principal, and during his time considerable additions to the buildings were made. In 1896, Captain Nunn was, in his turn, succeeded by the present Principal, Colonel Pease, C.I.E., who remained here till 1907. From that year till 1912 Colonel Pease was Inspector-General of the Civil Veterinary Department, but on the abolition of the latter post in 1912 he returned to his earlier love, this College. Its great success of late years is due in great measure to his enthusiasm for his profession, his organising capacity, and his energy and hard work. A monthly veterinary journal in Urdu was started, and vernacular text books in all subjects prepared.

A demand was arising for more highly trained veterinary assistants, as the Civil Department expanded; the training which sufficed for military requirements was found insufficient for district work. In outbreaks of serious diseases in the Army the British veterinary officers could always be called in to deal with them; the civilian veterinary assistant had to be prepared to do the work without assistance. So, as the result of a conference held in 1899 at Ambala, the course of

instruction was lengthened, and many new subjects added.

The abolition of the Ajmer Veterinary School in 1904 necessitated a further increase in our buildings, as all the students and the three Indian Professors were transferred here and the European staff was also strengthened. A still further elaboration of the course of training was rendered necessary before many years had elapsed by the expansion of district work, and the increased use of sera and vaccines in combating contagious diseases; it was also essential for the more highly trained men who were required for district work to fill the newly created post of Deputy Superintendent. It was accordingly decided in 1914, while keeping the ordinary three years course for military students, to introduce a four years course for civilian students, also to institute a post-graduate course in English to last for one year.

Meanwhile, the King Edward Memorial scheme necessitated the removal of the College to its present site in order to make room for the Medical College, and the result has been the erection of this fine building. I will not waste Your Excellency's time in describing the buildings to you; a short personal inspection will, I hope, prove to you that we have now a very fine College certainly the best in the East and equalled by few in Europe. There is a large staff of professors and lecturers, and everything necessary for a sound veterinary education has been provided. The cost of this building and of the site, which is nearly 23 acres in extent, is six lakhs and seventy-one thousand rupees. Our best thanks are due to Mr. Sullivan, the Government architect, to whom we are indebted for much of the excellence of the design, and to Mr. Dorman, Executive Engineer, and his assistants, for the good work done in the erection of the building.

"Ever since its inception the College has been most popular and most successful. It has turned out many hundreds of students who have done excellent work both in military and civil life. Many old students of this College are on active service with His Majesty's Forces in France and Mesopotamia. Although the classes are large, the number of applicants for admission has always been far in excess of the vacancies. Much of this success is due to the fact that this is the only Veterinary College in India in which, apart from the short post-graduate course mentioned above, all the teaching is given in vernacular. This enables us to get as students men from the agricultural classes, accustomed to handle animals, and many of these men do not know English; but are none the worse veterinary practitioners on this account.

"I have already mentioned what the College owes to Colonel Pease. It owes much to all its professors; among them perhaps the most prominent have been Messrs. Kettlewell, Nunn, Smith and Gaiger. The more prominent Indian professors I have already mentioned. I would add to the names of those already mentioned Ghulam Rasul. I now ask Your Excellency to declare the College open."

THE VICEEROY.

"Your Honour, Ladies and Gentlemen,—The address that has just been read has given us a most interesting account of the development of veterinary teaching in the Punjab from very small beginnings, and Colonel Hallen would have been a proud man could he have lived to see this day and realise that this splendid College has been evolved from the small class for veterinary instruction that he originally started at Hapur. That class contained the nucleus of a great idea that has gradually developed and forced its way to the ample recognition we see bestowed upon it to-day.

"But I do not think this result would have come about unless the successors of Colonel Hallen and the

professors and lecturers, who have done such excellent work, had played their own part with zeal and enthusiasm, and these qualities have been especially conspicuous in the present Principal, Colonel Pease, who after five years' absence on other duties returned to the College, and now has the happiness to see crystallised in this building the result of many years of effort, thought and labour. I have been particularly interested to learn that the main course of studies is conducted in the vernacular, while English is the language of the post-graduate course. There is more than one school of thought as to whether the medium of instruction in our higher educational institutions should be English or the vernacular, but I think few will be found to question the wisdom of the policy adopted here, for many of those, who are most fitted by their home surroundings for a useful veterinary career, have neither the time nor the inclination to become versed in Western culture, and it is hardly open to question that it must be far easier for them to imbibe a knowledge of veterinary science when imparted in their own tongue than if it was complicated by the mysteries of a foreign language. On the other hand, post-graduate courses necessitate the study of a wider range of literature, and there are obvious reasons for their being conducted in the English language.

"These buildings have been designed on a generous scale, and it is well that it should be so, for the demand for veterinary experts is rapidly increasing. The number of students has just doubled in the past ten years, and whereas 20 years ago there were only 26 veterinary dispensaries in the old undivided province of the Punjab, there are in the present province no fewer than 121. In the same period the number of animals treated has risen from 50,000 to 400,000.

"The address claims that this is the finest Veterinary College in the East, and I can well believe it is true, nor is it altogether unfitting that the Punjab should take the lead in veterinary enterprise. This province has long been famous for its breeds of cattle and horses, the bullocks of Hissar, the buffaloes of Rohtak, the cows of Montgomery, and the sturdy-speckled cattle from the Dhami Tract of the Salt Range are all well known to fame, while the horses from the Dhami Tract and Dera Ghazi Khan have more than a local reputation. The Sardars and Maliks of the Punjab have always loved their horses; perhaps that is partly the reason why more has been done in this province than in any other for horse-breeding. The horse-breeding scheme in the lower Jhelum Colony has recently been subjected to a very severe test on account of the demand for remounts due to the war, and has been able to meet it with conspicuous success. Under the operation of this scheme there has now for several years past been an average of something like 1,800 foals born every year, and it is believed that the limit has not yet been reached. It is hoped that in a year or two Government will be able to rely on a steady supply of a thousand mules a year from the Lower Chenab Colony alone. Of the four grantee Camel Corps at Lyallpur three have now been called up for active service. Large areas of land have been set apart on the Lower Bari Doab Canal for the encouragement of horse and mule breeding, and under the conditions of that scheme the grantees will maintain no less than 7000 mares for breeding purposes.

"We have been told that many old students of the College are at the front on active service in France and Mesopotamia, and they will there have opportunities of first-hand observation of the wonderful work that is being done to alleviate the sufferings of sick and wounded horses. I have no doubt that they, like their brothers in the fighting forces, will play, and have played, their part in maintaining the high reputation of India, and I can wish this College no better fortune

than that the young men who pass out of her portals may bear upon their brows the seal of enthusiasm for their profession and carry, wherever they go, a reputation for care and skill and tenderness for those dumb creatures to whom mankind owes such a heavy debt of gratitude.

"I congratulate all who have had a share in bringing this building to a successful completion, and not least, Mr. Sullivan, whose architectural designs have so happily materialised, and I now declare this College open."

At the close of his address the Viceroy was conducted round the College buildings by Mr. Townsend and Colonel Pease. The Viceroy's party also paid a tour of inspection, escorted by the College professors. When leaving, His Excellency was given a hearty send off by the students and visitors, and accorded three ringing cheers.—*Civil and Military Gazette.*

Grazing for sows and young pigs.

Attention has repeatedly been directed in Queensland to the advantages to be derived from the grazing of brood sows and growing pigs on lucerne. An account of the experience of breeders in the use of this method will serve to give details of the course successfully adopted there. It appears that farmers make a feature of pasturing pigs in small lucerne paddocks, and they find the enterprise so satisfactory that they are extending it. Several sub-divisions, each containing about an acre of land, are used, the pigs being periodically shifted as the ranker growth of the lucerne is consumed. It is found that so long as there is plenty of top-growth the pigs will not root the ground, and this fact plainly indicates the wisdom of not giving them cause to. The droppings of the pigs make rich manure, and a field, once the stock have been removed, and it has been irrigated, shows by the rapid and vigorous growth of its lucerne how much it has benefited by the animal manuring. Shortly before pigging, the sows are removed to a separate enclosure, where they are kept until the young pigs are about three weeks old. They and their progeny are then allowed to run with the other sows, and as each litter soon finds its own mother, no hardship arises from their being mixed. The breeders' experience is that a sow reared under outdoor conditions and with abundance of nutritious fodder at command produces larger and better litters than where she is confined.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Jan. 20.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieuts. to be temp. Capts.:—J. M. Jamieson (Jan. 10); G. K. Hobson, F. V. Perry (Jan. 11).

Jan. 22.

Capt. C. A. Murray to be temp. Major whilst holding appointment of Commdt. Sch. of Farry. (Oct. 13).

To be temp. Lieuts.:—H. J. Hughes (Jan. 11); J. Bradley, H. A. King (Jan. 12).

Jan. 24.

Temp. Lieuts. to be temp. Capts.:—M. Pilkey, G. H. Ward (Jan. 12); J. H. Laurie (Jan. 13); E. V. Hobbs, J. O. Guertin (Jan. 14).

Christian names of temp. Lieut. (now temp. Capt.) Joseph Orpha Guertin are as now described.

Jan. 25.

To be temp. Lieut.:—T. C. Howatson (Jan. 12).

Jan. 26.

Major R. L. Cranford to be temp. Lieut.-Col. while holding an appmnt. as asst. Dir. of Vet. Svces. (Jan. 1).

Surname of temp. Capt. H. E. Whitmore is as now described.

Temp. Lieuts. to be temp. Capts.:—W. D. Brand, C. E. Wolfe (Jan. 13); R. D. Macintosh (Jan. 14); J. L. Williams (Jan. 15).

Personal.

WYNN LLOYD. Jan. 17th, at Wynston, Carnarvon, to Mr. and Mrs. L. W. Wynn Lloyd—a daughter.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donation to the College funds:—

Mr. C. A. Squair, Reigate	1916	£1 1 0
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OBITUARY

JOHN G. CLAYTON, M.R.C.V.S., Senior Government Veterinarian, Wellington, N. Z.

Graduated, Edin.: May, 1888.

Mr. Clayton died on Jan 23rd, 1916.

MOTOR CAR LICENCE TAX.

Sir,—In my desire to save members' pockets (it is so troublesome to get a refund from the Excise) I wrote you too hurriedly last week *re* motor car licence. On subsequent enquiry from one of our parliamentary friends I discovered that the attempt to have it included with the motor spirit rebate failed; but a shot will be made to secure the concession at the first more favourable opportunity. Meanwhile every V.S. should impress on their M.P.s. the justness of our request. I need hardly repeat the several reasons which I pointed out in my letter of last September, but I might add that whilst our expenses have increased to an extraordinary degree we do not find it feasible to increase our fees, or rather, perhaps, we are reluctant to do so.

Our claim to the same terms as the medical profession having been so far admitted, there should not be too much difficulty in establishing our right to the full.

It occurs to me that we in Ireland could secure the reduction as things stand. The High Courts here, when adjudicating in the case of Mr. Chas. Allen and the Jury Act, having decided that veterinary surgeons came under the heading of medicals.

Apologising for having raised false hopes and putting so many to the trouble of writing to me on the subject, I yet hope that good may come out of my mistake, as it may concentrate more of our attention on the further point, which we should endeavour to gain at the earliest opportunity.—Yours truly,

JOHN HOLLAND.

Athy, 21st January.

The losses of stock in Queensland owing to the drought have been enormous. In 1914 the number of sheep was over 23,000,000, the highest in the history of the State. A reliable authority estimates last year's mortality among sheep at 35 per cent., while lambing was almost a total failure. The cattle losses are estimated at 20 per cent.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)			(a)	
Gr. BRITAIN.											
Week ended Jan. 22	12	12			1	1	100	256	18	81	313
Corresponding week in											
1915 ...	16	18					†	†	12	74	394
1914 ...	15	16			2	3	108	228	20	44	344
1913 ...	12	13			2	8	91	227	7	39	382
Total for 4 weeks, 1916	56	58			3	9	398	1104	87	314	1044
Corresponding period in											
1915 ...	74	82			2	4	†	†	54	334	1566
1914 ...	77	84			8	25	335	668	52	180	1504
1913 ...	50	61			13	59	347	837	45	146	2002

† The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, Jan. 25, 1916.

† Counties affected, animals attacked:—
Warwick 1.

IRELAND.	Week ended Jan. 22	...	...	...	...	...	Outbreaks	21	2	7
		...	...	...	...	...	4			
Corresponding Week in		...	...	...	...	...
1915 ...		...	...	...	...	...	1	13	5	28
1914 ...		...	...	...	...	...	10	45	5	44
1913 ...		...	...	...	...	...	8	32	6	14
Total for 4 weeks, 1916	...	1	5	...	...	...	9	65	13	36
Corresponding period in		...	...	...	...	...
1915 ...		...	...	...	...	...	3	53	15	80
1914 ...		...	...	...	...	...	14	85	11	74
1913 ...		...	...	...	...	...	37	77	24	99

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Jan. 24, 1916
NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

Veterinary Societies—Addresses.

BORDER COUNTIES V.M.S.

Pres: Mr. H. Barrow, M.R.C.V.S., Ireby, Carlisle
Hon. Sec: Mr. R. Craig Robinson, M.R.C.V.S., Carlisle
Meetings, Second Friday of Feb., June, and October

GLASGOW V.M.S.

Pres.
Hon. Sec. Mr. J. D. Fulton, 83 Buccleuch Street, Glasgow

ROYAL VETERINARY COLLEGE V.M.A.

Pres: Prof. E. Brayley Reynolds.
Hon. Sec: Mr. B. Gorton, M.R.C.V.S. Assist. Mr. P. R. Turner

ASSOCIATION OF VETERINARY OFFICERS OF HEALTH

Pres: Mr. T. Douglas, M.R.C.V.S., Kilmarnock
Hon. Sec. & Treas. Mr. A. M. Trotter, M.R.C.V.S.,
Moore Street, Abattoir, Glasgow

NATIONAL ASSOCIATION OF VETERINARY INSPECTORS

Pres: Mr. J. Abson, F.R.C.V.S., Sheffield
Hon. Sec: Mr. Trevor Spencer, M.R.C.V.S., Kettering

MUNSTER VETERINARY INSPECTORS' ASSOCIATION

Pres: Mr. D. M. Barry, M.R.C.V.S., Mallow
Hon. Sec: Mr. T. I. Alexander, M.R.C.V.S., Kinsale

NATIONAL VETERINARY BENEVOLENT & MUTUAL DEFENCE SOCIETY.

Pres: Mr. W. A. Taylor, F.R.C.V.S., Brick-st, Manchester
Hon. Sec: Mr. G. H. Locke, M.R.C.V.S.,
Grosvenor Street, Oxford-st., Manchester
Treas: Mr. J. B. Wolstenholme, F.R.C.V.S.,
Quay-street, Manchester

VICTORIA VETERINARY BENEVOLENT FUND.

Pres. Mr. S. H. Slocock, F.R.C.V.S., Montague Rd, Hounslow
Hon. Sec. & Treas: Mr. W. Shipley, F.R.C.V.S.,
South Town, Great Yarmouth

COLONIAL SOCIETIES.

VETERINARY ASSOCIATION OF NEW SOUTH WALES.

Pres: Mr. S. T. D. Symons, M.R.C.V.S., Chief Insp. of Stock
V. Pres: Maj. A. P. Gribben, F.V.O., M.R.C.V.S.
Hon. Sec. & Treas: Mr. Max. Henry, M.R.C.V.S., B.V.Sc. (STD).
56 Bridge Street, Sydney

BRITISH COLUMBIA V.M.A.

Pres: Dr. Gibbons, M.R.C.V.S., Vancouver,
Hon. Pres: Dr. Hamilton, M.R.C.V.S., Victoria.
Sec., Treas., Registrar. Dr. T. Jagger, V.S., Vancouver.

ASSOCIATION MÉDICALE VÉTÉRINAIRE FRANÇAISE "LAVAL"

Sec: Mr. J. P. A. Houde, Montreal
PROVINCE OF QUEBEC V.M.A.

Hon. Sec. Mr. Gustave Boyer, Rigaud, P.Q.

VETERINARY ASSOCIATION OF ALBERTA

Hon. Sec. Mr. C. H. H. Sweetapple,
For Saskatchewan, Alta.

ONTARIO V.A.

Pres: Mr. J. H. Tennent, v.s., London, Ontario
Sec: & Treas: Mr. L. A. Wilson, Toronto, Ontario

TRANSVAAL V.M.A.

Pres: Mr. C. E. Gray, P.V.S., Box 134, Pretoria.
Hon. Sec: Mr. P. Conacher, G.V.S., Box 877, Johannesburg

CAPE OF GOOD HOPE V.M.S.

Pres. Mr. J. D. Borthwick, M.R.C.V.S., Cape Town
Hon. Sec. & Treas. Mr. J. W. Crowhurst, F.R.C.V.S.,
Longmarket Street, Cape Town

CENTRAL CANADA V.A.

Pres. Mr. Geo. Hilton
Hon. Sec: Mr. A. E. James, Ottawa

VET. ASSN. OF MANITOBA.

Pres: Dr. W. R. Taylor, Portage la Prairie
Hon. Sec. & Treas: Mr. Wm. Hilton, Winnipeg

NATAL VETERINARY MEDICAL ASSOCIATION.

Pres. Mr. F. J. Carless, M.R.C.V.S., Mooi River
Hon. Sec. & Treas. Mr. A. Goulé, Eshowe, Zululand

Royal College of Veterinary Surgeons.

President: Mr. Frank W. Garnett, M.R.C.V.S., J.P.
Vice-Presidents: Mr. J. H. Carter, F.R.C.V.S., F.R.S.E.
 Mr. W. J. Mulvey, F.R.C.V.S., J.P.
Secretary and Registrar: Mr. Fred Bullock,
 10 Red Lion Square, London, W.C.

NATIONAL VETERINARY ASSOCIATION

President: Dr. O. Charnock Bradley, Prin. R.V. Coll., Edin.
Sec: Mr. J. W. Brittlebank, M.R.C.V.S.,
 Town Hall, Manchester
Assist. Sec: Mr. W. L. Harrison, F.R.C.V.S.,
 11 Anchor Terrace, Southwark Bridge, S.E.
Treas: Prof. G. H. Wooldridge, F.R.C.V.S.,
 Ryl. Vet. Coll., Camden Town N.W.

Northern Branch:

Pres. W. A. Taylor, (F) Brick Street, Manchester
Hon. Sec. A. W. Noël Pillers, (F)
 71 Smithdown Lane, Liverpool
LANCASHIRE V.M.A.
Pres: Mr. G. H. Locke, M.R.C.V.S.,
 Grosvenor-street, Manchester
Hon. Sec. Mr. J. W. Brittlebank, M.R.C.V.S.,
 Town Hall, Manchester
Hon. Treas: Mr. E. H. Stent, M.R.C.V.S., Preston-st, Hulme
Meetings, 1st Thursday in April, June, Sept., & Dec.
LIVERPOOL UNIVERSITY V.M.S.
Pres: Mr. J. P. Heyes, F.R.C.V.S., Wigan
Hon. Sec: Mr. A. Walker, F.R.C.V.S., Mill Lane, West Derby
Pathological Sec: Mr. D. C. Matheson, F.R.C.V.S.
Meetings, May, July, October, January.

MIDLAND COUNTIES V.M.A.
Pres: Mr. J. Malcolm, F.R.C.V.S., Birmingham
Hon. Sec: Mr. H. J. Dawes, F.R.C.V.S.,
 Camden House, High-st., West Bromwich
Hon. Treas. Mr. J. J. Burchall, M.R.C.V.S., Barrow-on-Soar
Meetings, Second Tuesday, Wednesday, Thursday, and
 Friday alternately in Feb., May, Aug. and Nov.

NORTH OF ENGLAND V.M.A.
Pres:
Hon. Sec: T. T. Jack, M.R.C.V.S., 8 Elmwood-st, Sunderland
Meetings, Third Friday, Feb., May, Aug. and Nov.

NORTH MIDLAND VETERINARY ASSOCIATION
Pres: Mr. M. Robinson, M.R.C.V.S., Barnsley
Hon. Sec: Mr. J. S. Lloyd, F.R.C.V.S., Sheffield

NORTH WALES V.M.A.
Pres: Mr. Hugh Williams, M.R.C.V.S., Ty Croes
Hon. Sec. Mr. L. W. Wynn Lloyd, M.R.C.V.S., Carnarvon
Meetings, First Tuesday, March and September

SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.
Pres: Mr. J. M. Walker, F.R.C.V.S., Hartlepool
Hon. Sec. & Treas: Mr. F. H. Sanderson, M.R.C.V.S.,
 Victoria Road, Darlington
Meetings, First Friday, Mar., June, Sept. and Dec.

YORKSHIRE VET. ASSOCIATION
Pres: W. Crawford, M.R.C.V.S., 155 Woodhouse Lane, Leeds
Hon. Sec: Mr. J. Clarkson, M.R.C.V.S., Garforth, nr. Leeds
Hon. Treas: Mr. A. McCarmick, M.R.C.V.S.,
 Kirkstall-road, Leeds

Southern Branch:

Pres. Sir Stewart Stockman, 4 Whitehall Place, S.W.
Sec. T. C. Toope, 34 High Street, Dover
CENTRAL V.S.
Pres. Mr. W. R. Davis, M.R.C.V.S., Chase Side, Enfield
Hon. Sec: Mr. H. A. MacCormack, M.R.C.V.S.,
 122 St. George's Avenue, Tufnell Park, N.
Meetings, First Thursday in each month, except August
 and September, 10 Red Lion Square, Holborn, at 7 p.m.

EASTERN COUNTIES V.M.A.
Pres. Mr. T. E. Barcham, M.R.C.V.S., Paston, Norfolk
Hon. Sec. & Treas: Mr. A. C. Holl, M.R.C.V.S.,
 New Buckenham
Meetings, Second Tuesday, Feb., July and Sept.

LINCOLNSHIRE AND DISTRICT V.M.S.
Pres. Mr. C. W. Townsend, F.R.C.V.S.,
 Long Stanton, Cambridge
Hon. Sec. & Treas: Mr. Tom Hicks, M.R.C.V.S.,
 Boston Road, Sleaford
Meetings, Second Thursday Feb., June, and October

ROYAL COUNTIES V.M.A.
Pres: Mr. J. Willett, M.R.C.V.S., 6 Harley Place, N.W.
Hon. Sec. & Treas: Mr. G. P. Male, M.R.C.V.S., Reading
Meetings, Last Friday, Jan., April, July and Nov.

SOUTHERN COUNTIES V.S.
Pres: Mr. G. H. Livesey, M.R.C.V.S., Hove, Sussex
Hon. Sec: Mr. A. H. Archer, M.R.C.V.S., Southsea, Portsmouth
Hon. Treas: Mr. E. W. Baker, M.R.C.V.S., Wimborne
Meetings, Last Thursday, Mar., June and Sept.

SOUTH EASTERN V.A.
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Hon. Sec. & Treas. Mr. Theo. C. Toope, M.R.C.V.S.,
 84 High Street, Dover

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Hon. Sec. Mr. W. Ascott, M.R.C.V.S., Bideford
Hon. Treas: Mr. P. G. Bond, M.R.C.V.S., Plymouth
Meetings, Third Thursday, March, July and November

Irish Branch:

Pres. Mr. A. Watson, Municipal Buildings, Dublin
Sec. Mr. P. D. Reavy, Leafield, Bundoran, Co. Donegal

CENTRAL V.A. OF IRELAND.
Pres: Mr. B. P. J. Mahony, M.R.C.V.S., Maryborough
Hon. Sec. Mr. E. C. Winter, F.R.C.V.S., Queen-st., Limerick
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NORTH OF IRELAND V.M.A.
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Hon. Sec: Mr. J. A. Jordan, M.R.C.V.S., Belfast
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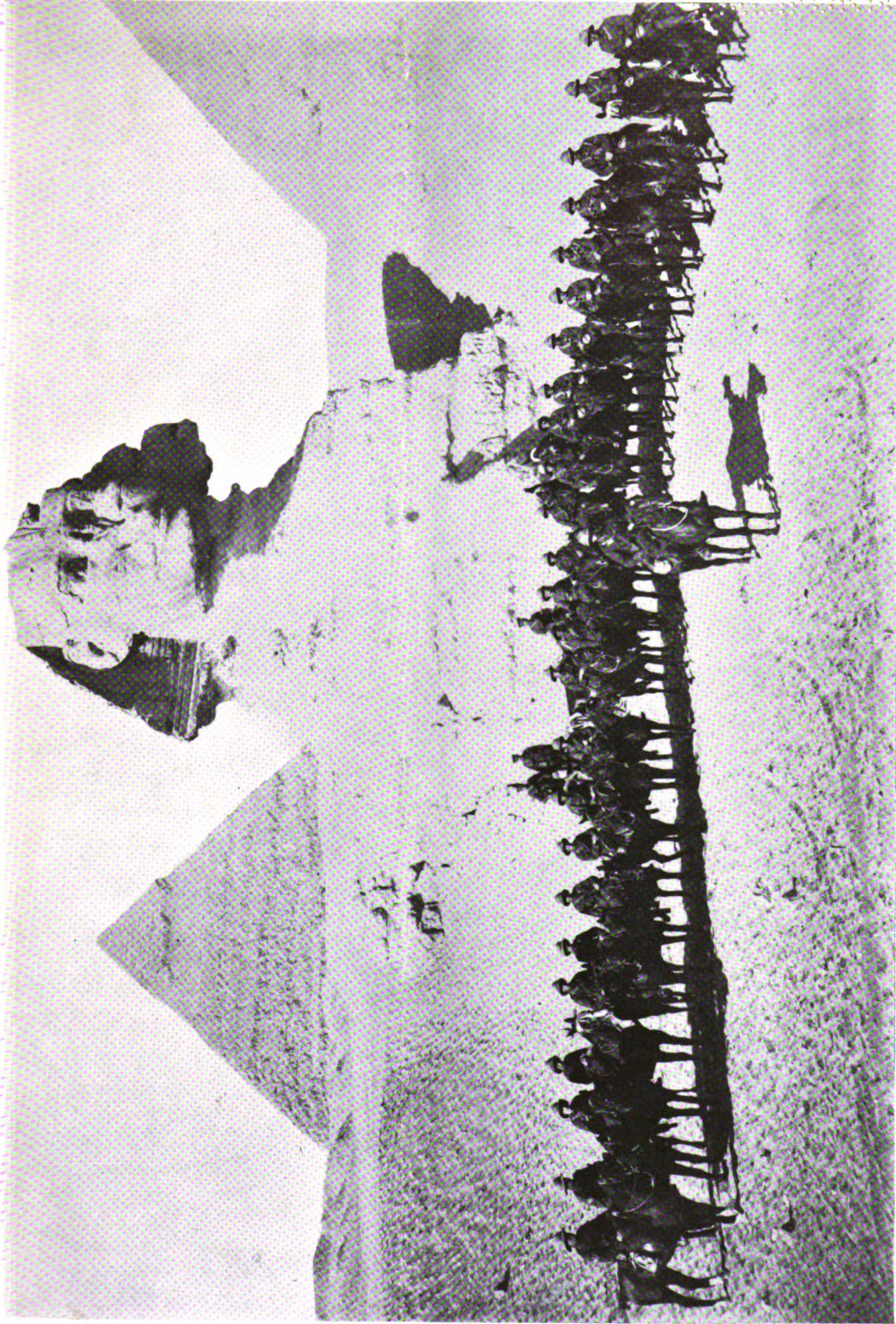
Pres. Dr. O. Charnock Bradley,
 Ryl. (Dick) Vet. Coll: Edinburgh
Hon. Sec. Prof. A. Gofton, Municipal Buildings, Edin.

NORTH OF SCOTLAND V.M.S.
Pres: Mr. W. Marshall, M.R.C.V.S., Aberdeen
Hon. Sec. & Treas: Mr. G. Howie, M.R.C.V.S., Alford, Aberdeen
Meetings, Last Saturday in January and August

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Pres: Mr. Reid, M.R.C.V.S., Auchtermuchty.

SCOTTISH METROPOLITAN V.M.S.
Pres: Mr. J. Riddoch, M.R.C.V.S., Edinburgh
Hon. Sec. & Treas: Mr. Jas. Henderson, M.R.C.V.S.,
 Public Health Dept., City Chambers, Edinburgh

WEST OF SCOTLAND V.M.A.
Pres: Prof. John R. McCall, M.R.C.V.S., Vety. Coll. Glasgow
Hon. Sec: Mr. J. F. Macintyre, M.R.C.V.S.,
 19 Bank Street, Hillhead, Glasgow
Hon. Treas: Mr. Geo. W. Weir, M.R.C.V.S.,
 88 Crookston Street, Glasgow
Meetings, Second Wednesday, May, Oct. and January.



D MOBILE VETERINARY SECTION. CHRISTMAS DAY, 1915.

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THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.O.V.S.

No. 1439.

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VOL. XXVIII.

THE NUMBERS OF THE PROFESSION.

Of late years the number of graduates upon our Register has not altered greatly: the tendency has been rather to decline than to advance, but the decrease has not been very evident. In a few years time, it is probable that the decline will have become quite marked; and that it will affect private practice more than would appear at first sight.

Far fewer men will join the profession during the next few years at least—that much is certain: and we must expect about the usual number of deaths; obviously this ensures a decrease in our Register. In addition, new graduates of the future and young men already graduated will find more inducements to draw them away from private practice than have ever been offered before.

It is quite possible that the war may be followed by a permanent increase in our standing Army, and this will mean an increase in its normal annual call upon the profession. It is certain that whole-time civil veterinary appointments at home and abroad, which were increasing before the war, will continue to do so afterwards; and this will attract many who might otherwise have practised privately. Probably, also, our Colonisation will expand, and though it may not affect our profession greatly at first, will undoubtedly work in the same direction. Add to this the general recognition that private practice is not now, and probably never will be again, so lucrative as it once was, and it seems clear that we may expect that, of the diminished number of men entering the profession in the next few years, only very few—and those as a rule not the best, will elect to practise privately. This will mean that each year the deaths of men in practice will exceed the number of entrants to the profession.

For the next few years, this need not greatly concern us. Times will be very hard for private practitioners, and overcrowding would make them harder; though we doubt whether, taking the United Kingdom as a whole, the profession has ever been so surcharged as some have thought. But, if the conditions likely to obtain in the near future continue long, their effect will be serious. A permanently low supply of new graduates, with a permanently increased call upon them from the public services, must end in the supply of private practitioners falling below the national requirements. Looking ahead, such a contingency does not appear to be unlikely.

A CONTRAST.

In our last issue we commented very briefly on the treatment accorded to veterinary work in India and our Oversea Dominions and in England. Commenting on this, and on the new Veterinary College at Lahore, and the opening ceremony, a correspondent writes us:—

“Apparently in India things are arranged differently as regards so-called ‘status.’ The Viceroy goes *first* to open the Veterinary College, and, *secondly*, to open the Medical College. He goes accompanied by the Legislative Council, the Judges of the Chief Court, and the principal civil and military officials in the Province. The streets are lined with police and kept clear of traffic; a guard of honour is drawn up at the College to await his arrival, and the new Veterinary College, which cost 10 lakhs (or £66,000), is opened with considerable pomp.

Imagine the King and his Cabinet and principal Judges driving through the streets of London, cleared of traffic, to open a new State-endowed Veterinary College!!!”

FRACTURED FEMUR.

The subject of this note was a small bay mule gelding—an aged animal.

History. At the time of the accident, the mule was carrying a loaded pack on the line of march, and it was reported that the animal fell under its load and rolled into a ditch, and was got on to its feet again with great difficulty, and was then found to be extremely lame of the near hind leg.

After examination of the case I diagnosed fracture of the femur, and the animal was destroyed.

Post-mortem examination showed that there was comminuted fracture of the left femur—the shaft and head of the bone being broken into twelve pieces. The distal end (the condyles and trochlea and a small portion of the shaft) were intact.

A. N. FOSTER, Capt. A.V.C.

In the field, 29 Jan., '16.

We are indebted to Capt. P. McIntyre, A.V.C. (T.) for the photograph of D Mobile Vety. Section (Territorial) at the foot of the Sphinx, on Christmas Day, 1915, which we reproduce this week.

NICOTINE POISONING.

An army horse suffering from lice was clipped and dressed, "as far as can be gathered," with a 1 to 20 solution of Nicotine, instead of 1 to 120. An hour after the dressing was applied she began to blow hard and show pain, and broke out into a very profuse sweat.

When seen two hours after she was still blowing very hard, and down, but got up and walked to box about 20 yards away; staggering gait, trembling all over, twitching of the neck muscles and jerking the head up, extremities cold, but warm under the rugs. Pulse imperceptible, temperature 93.

There also appeared to be a form of lock-jaw, as the jaws could be opened only about two inches, and it was impossible to ball her and very difficult to get any liquid down. She gradually improved, and next morning was feeding well, and showed little the matter with her.

ARNOLD SPICER, F.R.C.V.S.

New Oxted.

PARALYSIS OF RECTUM AND BLADDER.

The following case may be of interest. Although presenting no unusual symptoms, it is not of common occurrence.

Subject. Common light draught mare, age 12 years.

I have been unable to obtain the history. The animal was sent to the mobile veterinary section, with a note stating that she was suffering from debility and paralysis of the rectum.

Symptoms. Sphincter ani relaxed, with a quantity of faeces protruding from the anus. Incontinence of urine: the thighs were irritated from the continuous dripping of the latter, which sometimes came away in drops and other times in a stream without the animal getting into the position usually taken during urination. The animal sometimes extended itself and strained as if in pain.

Partial paralysis of the tail, especially the levator muscles, with atrophy of the muscles of the hind quarters, particularly the gluteals. The animal passed no faeces except that portion which was pushed outside the anus and got rid of by gravitation.

I examined the vagina and rectum by hand. The vagina was normal though compressed, due to the enormous dilation of the rectum, from which I removed 26 lbs. of faeces. From the rectum I explored the pelvis and under aspect of lumbo-sacral vertebrae, but found nothing abnormal except the great fulness of the bladder.

To outward appearance there was an enlargement in the sacral region in the neighbourhood of the croup, but on manipulation it did not present any abnormality, and may be accounted for by the atrophy of the muscles referred to. The animal's general health was good.

Treatment. Administered a physic ball, followed by daily hypodermic injection of strychnine.

I had this case under observation and treatment for a fortnight, during which time no different

symptoms developed, nor was there any appreciable sign of the paralysis being progressive. The only good the treatment seemed to do was to retard the disease.

The animal was evacuated to one of our base hospitals, so that I have lost sight of the case.

J. Fox, Lieut. A.V.C. (S.B.)

[Two films which accompanied this note were, unfortunately, not strong enough to reproduce.]

ABSTRACTS FROM FOREIGN JOURNALS.

THE INTRA-PALPEBRAL MALLEIN REACTION.

The intra-palpebral mallein reaction was proposed by Lanfranchi in 1914, with the idea of combining in one method the joint actions of the classic subcutaneous mallein test and the ophthalmic test, and so avoiding the errors that accompany both methods when employed separately.

The technique of the intra-palpebral test is very simple, and consists in injecting the classic dose of mallein into the thickness of the lower eyelid. The injection is made by driving in the needle horizontally, one centimetre (2/5 inch) from the edge of the eyelid, about its centre. The results distinctly represent the compendium of the subcutaneous and the ophthalmic mallein tests.

Francesco Favero publishes a highly detailed report of the reactions to the test which he observed in two glandered horses.

The first case was a half-bred mare, seven years old, a capital trotter, and in excellent condition. She was suspected of glanders and subjected to the ophthalmic mallein test. This gave a positive reaction, which was prolonged into the third day. The histological examination of the conjunctival exudate showed 98% of polynucleated neutrophile cells. The mare was then subjected to the intra-palpebral test upon the other eye.

The thermic reaction was speedy and considerable. It reached its maximum in eight hours with a register of 106.5° F., being a rise of about 6.5° F. over the previous average temperature. On the fifth day, when the animal was slaughtered, it had not yet descended to the normal.

There was a notable general reaction. The animal showed dulness, prostration, and loss of appetite. On the first day there were muscular tremors, especially of the shoulders and thighs, which shook the whole of the body.

The local reaction commenced in the second hour with a diffuse oedematous swelling of all the lower eyelid and of the upper eyelid. The oedema gradually augmented and became more diffused; and in twenty-four hours reached downwards to the inferior limit of the zygomatic crest, somewhat surpassing it anteriorly, and posteriorly reaching to the arcade of the lower mandible. It remained thus stationary for some hours, then gradually diminished, but on the fifth day had not yet completely disappeared. The oedema was warm, tense, and very sensitive.

A purulent conjunctivitis also appeared. At the third hour, a collection of thick yellowish material was noticed in the conjunctival sac. At the fourth hour this appeared at the internal angle of the eye in the form of a clot as large as a kidney bean. Afterwards it augmented by degrees, and from the eighteenth to the twenty-fourth hour it flowed from all the free edge of the lower eyelid in the form of a thick veil, adhering to and soiling the hairs of a considerable portion of the underlying cheek. The discharge continued for about thirty hours. Histological examination of the discharge revealed 92% of neutrophile polynucleated cells.

Post-mortem examination confirmed the existence of glanderous infection, with limited and recent lesions.

The second case was a common-bred heavy draught horse, about twenty years old, in bad condition, brought for treatment because it was said to be affected with strangles. Swollen glands and a suspicious bilateral discharge were present. The ophthalmic mallein test was practised, and the horse reacted positively, with a very abundant purulent secretion persisting for about forty hours. Histological examination of this revealed 95% of neutrophile polynucleated cells.

The intra-palpebral reaction was then attempted upon *the same* eye. The thermic reaction was quick and very distinct. It reached its maximum at the eighth hour with a register of 104.5° F., being a difference of almost 4° F. over the preceding average temperature. It remained thus, with the exception of very slight oscillations, till the twenty-fourth hour, then gradually descended, and returned to the normal at the seventieth hour.

The general reaction was slightly appreciable. The horse showed a certain degree of depression and loss of appetite.

The local reaction was considerable. It was represented by a tense, warm, and very sensitive swelling, which involved both eyelids, reducing the interpalpebral space to a mere fissure. The swelling extended over a considerable portion of the cheek, and reached its maximum about the eighteenth hour. Inferiorly, it reached down beyond the inferior limit of the zygomatic crest. It remained thus for about twelve hours and then gradually diminished, lessening first upon the cheek and then in the eyelids, and finally it disappeared altogether at the seventh day.

There was also a considerable ophthalmic reaction. At the eighth hour, large flakes of a purulent material were hanging from the reduced interpalpebral space. The discharge was very persistent, and at the second or third day it was slightly hæmorrhagic. At the fifth day it became purulent again, then muco-purulent, and finally ceased on the eighth day. Histological examination of discharge collected at the eighth hour revealed 91% of neutrophile polynucleated cells.

Post-mortem examination revealed diffuse glanderous lesions, both recent and old.

Before destroying this second horse, the author also subjected it to the intradermopalpebro-reaction, which he carried out upon the eye which had

not yet been tested, in the following manner. Seven days after the intrapalpebral test, a dose of 0.2 c.c. of mallein diluted with physiological solution in the proportion of 1 to 10 was injected *into the thickness of the derma*—about the middle of the eyelid, and a centimetre from its border.

The reaction was represented by a swelling of the eyelid, which commenced in the first hour and reached its maximum towards the eighth or tenth hour, reducing the interpalpebral space to a third of the normal, and becoming diffused for a short time to the underlying region. It remained stationary for about twenty-four hours, then gradually diminished, and disappeared at the seventh day. Conjunctivitis was also seen, with a scanty muco-purulent discharge which commenced about the sixth hour and persisted till the thirty-sixth.

The author also used this last method upon some non-glandered horses. These showed a more or less diffuse swelling of the eye-lid, which disappeared in a period of about eighteen hours.

The author regards these two cases as confirming the value of the ophthalmic test, and as showing that the histological examination of the conjunctival exudate is a useful auxiliary to it. He thinks, however, that the intrapalpebral reaction is an even better test, as it combines all the results of both the subcutaneous and ophthalmic tests. He remarks that in both his cases the thermic reaction appeared quickly, and attributes this to a more rapid absorption of mallein than occurs in the subcutaneous test. The general reaction was marked in the first case and slight in the second, and the author explains this by the fact that the first horse was a well-bred one and of nervous temperament, while the second was of common breed. He adds that a preceding ophthalmic test seems to exaggerate the local and ophthalmic effects of the intrapalpebral test, both as regards intensity and duration.

The author has used the intrapalpebral test upon numerous non-glandered horses, with results that were always distinctly negative. In some, he noticed a swelling of the eyelid which appeared at the second or third hour and disappeared in a period of twelve to eighteen hours at most, without a true ophthalmic reaction. In glandered subjects, on the other hand, the local manifestations are considerable both in intensity and duration, and are easy of interpretation. The author, then, highly recommends the intrapalpebral reaction. One of its advantages is that it may be employed upon feverish subjects.—(*La Clinica Veterinaria*).

EXPERIMENTAL TUBERCULOSIS IN THE GUINEA PIG

G. Kiralfi, of Budapest, has recorded the following peculiar case of experimental tuberculosis in a guinea-pig. The animal was killed four weeks after being inoculated with material suspected of being tuberculous. Post-mortem, none of the anatomical appearances which are characteristic of experimental tuberculosis in guinea-pigs were found. On the other hand, on the intestinal wall of three different divisions of the small intestine, lesions were found the nature of which were at first diffi-

cult to determine, but which, when histologically examined, proved to be tuberculous. The uncommon features of this condition were the kind and the localisation of the tubercular lesions, and their independent appearance without coincident tubercular alterations of the tissues elsewhere. The case is worthy of recollection in connection with the post-mortem examination of experimentally inoculated guinea-pigs.—(*Berliner Tier. Woch.*)

THE RAVEN AND THE FOX AS ANTHRAX CARRIERS.

F. Mollet has published (*Zentralbl. für Bakt.*) a note upon this subject. Taking into consideration the special conditions which exist in Switzerland, he has minutely examined all the factors which may favour the spread of anthrax. In his investigation are included some very interesting researches upon the question whether the faeces of ravens and foxes which have ingested anthrax flesh can contain living germs and so become a cause of contagion. The author finds that anthrax bacilli are killed in the digestive tract of the raven and of the fox, while anthrax spores pass uninjured through the intestines of these animals.

He therefore concludes that these animals, if they have previously ingested infected carrion containing anthrax spores, may very well transmit anthrax germs to great distances with their faeces. *La Clinica Veterinaria.*

W. R. C.

SOME PROBABLE DEVELOPMENTS OF THE WORK OF STATE VETERINARY OFFICERS, by Professor S. DÉLÉPINE, M.B., C.M., M.Sc., Director of the Public Health Laboratory, University of Manchester.

It has been shown that a fairly heavy and lengthy course of post-graduate studies is needed by candidates for the Diploma in Veterinary State Medicine, in order that the diploma should be a guarantee of the fitness of its holders for the discharge of public duties in relation to public health, veterinary preventive medicine and hygiene generally.

The number of responsible and well-remunerated full-time public posts open in this country to men who have devoted some time to post-graduate studies bearing upon the prevention of animal diseases is comparatively restricted at present, and, consequently, the number of men undergoing special training in preparation for these posts is small. The time must come sooner or later when it will be recognised that further progress in the control of animal diseases for agricultural and public health purposes can only be realised by the creation of a well-organised and competent State Veterinary Service.

The very important work which has been done by the Board of Agriculture and veterinary colleges upon epizootic diseases, such as contagious pleuro-pneumonia, rabies, swine fever, foot-and-mouth disease, outbreaks of which are likely to occur with dramatic suddenness, must not blind us to the fact that there are other diseases which are always with us, constantly spreading, and claiming a vast number of victims, but attracting less attention because they are more insidious, more slowly progressive, and possibly more troublesome to deal with.

It would be difficult at the present time, except with regard to some of the acute epizootic diseases to which

the Board of Agriculture devotes special attention, to obtain accurate data as to the prevalence and distribution of animal diseases; yet without this knowledge the devising of proper measures for the control and prevention of these diseases is difficult, if not impossible.

In connection with tuberculosis, some sanitary authorities have appointed veterinary surgeons to co-operate with the medical officer of health, especially with the view of preventing infection of human beings. The amount and responsibility of the work thrown upon some of these officers may be indicated by one example. The veterinary officer appointed by the Manchester Sanitary Committee to inspect cows and farms in connection with the milk supply, has had under his supervision more than 35,000 cows housed in nearly 2000 farms situated chiefly in six counties.

In several important cities the inspection of meat is entrusted to competent veterinary inspectors, but this system is not yet general, and where it is in force the amount of work thrown upon the veterinary staff is so great that only part of the good that might be expected is realised. In the year 1904, in Manchester, the number of carcasses that had to be inspected amounted to more than one per minute, day and night.

Under present conditions, our knowledge of the causes, prevalence, distribution, and prevention of the diseases to which animals are liable in this country, could not be expected to grow very rapidly. It is to be hoped that in the near future there will be in each county a sufficient number of competent State veterinary officers devoting the whole of their energies to the study of the causes, the occurrence, the conditions influencing the prevalence, the administrative control, and the prevention of the animal diseases occurring in the districts in their charge. From these officers and, if necessary, from officers connected with county boroughs, the agricultural and the public health authorities should be able and entitled to obtain all the information they require.

In each administrative area the veterinary staff should have at their disposal isolation sheds suitable for the study of living animals affected with diseases requiring investigation. The opportunities offered by the abattoirs should also be utilised for the purpose of controlling accurately the effects of preventive measures carried out in country districts. At each important public abattoir (all abattoirs should be public) there should be one or more competent officers, whose duty it would be to determine the nature of the diseases causing the lesions observed in slaughtered animals. By a well-organised system of registration it would be possible after a comparatively short time to obtain more accurate ideas than we have at present of the prevalence and distribution of animal diseases.

The central authority, by which the work of all these local officers would be co-ordinated and to which all their reports would gravitate, would be in a better position than it is at present to legislate and govern efficiently.

These remarks relate only to some branches of a Home Veterinary Service, the creation of which cannot be indefinitely postponed. It must, however, be remembered that there are other departments opened to well-trained veterinary officers. Among these may be mentioned the Army Veterinary Service, the Indian Civil Veterinary Department, the Colonial Veterinary Services, the Veterinary Department of the Board of Agriculture and Fisheries. Although present conditions are not such as to stimulate keen competition for public posts open to veterinary health officers, the future may have in store greater inducements to specialised studies.

—*Public Health*, Sept., 1915.

Slaughtering of Calves.—Fines.

At Crewkerne, Charles Frampton, butcher and dealer, of Beaminster, was summoned for causing or permitting to be slaughtered five calves which had been purchased by auction at sums over 30s. He was further summoned for causing or permitting seven calves to be slaughtered which were not marked with a broad-arrow as required. Frederick W. Boalch, butcher and dealer, of Misterton, and his son, Frederick W. Boalch, were also summoned for aiding and abetting Frampton in committing the said offence. The cases were taken together, and defendants pleaded guilty.

Supt. Bartlett stated that on the 5th inst. the defendant Frampton purchased seven calves at Bridport auction from Messrs. Morey & Son. They were moved to his premises at Beaminster, where he carried on the business as a butcher with his father and brother. While he was unloading the calves he was seen by Police-Sergeant Richardson of the Dorset Constabulary who asked if they were marked for slaughter. On examination, they were found not to be so marked. Defendant was given to understand they could not be slaughtered. The following morning the sergeant discovered they had been removed, and he traced them to Misterton.

Answering Mr. Hussey, Supt. Bartlett said the calves were marked at the auction either by the auctioneer or his assistant before they were moved. Continuing, Mr. Bartlett said the prices were £3 5s., 14s., £2 14s., £1 14s., £2 6s., £1 5s., £4, £2 4s., and £3. This was the first case in that part of the country.

Police-Sergeant Richardson (Beaminster) stated that he, in company with Police-Sergeant Broome, visited Mr. Boalch's slaughterhouse at Misterton. There they saw seven calves slaughtered and hung up. One of these, a black heifer calf, witness identified as the calf he saw in Frampton's premises the previous night.

The Chairman said defendants had clearly intended to evade the law. It looked as if they had been acting in collusion. On the first charge, Frampton would be fined £15—£3 per animal—and in the second, £21. Boalch would be fined £14, and his son, who ought to have known better and could not be held blameless, would be fined £7.

Supt. Bartlett asked for 10s. 8d. expenses, and these were allowed. The total amount of the fines was £57 10s. 6d.

The Anthrax Order—Cuckfield.

Charles Pearce, farmer, Cuckfield, was summoned for an offence under the Anthrax Order. Defendant pleaded guilty.

Mr. Lawson Lewis said defendant was a farmer of Pilstye Farm, Cuckfield. The allegation was that he acted in contravention of Regulation 10 of the Anthrax Order, 1910, but there could have been laid against him two informations: one for failing to notify a suspected case of anthrax, and the other for cutting the carcass of a suspected animal. They proceeded only with regard to the latter one. On December 22nd a cow belonging to the defendant died suddenly. There was suspicion of the disease from which the animal died, and there was an obligation upon the defendant. The defendant left the carcass unburied in a field, and he cut off an ear, wrapped it up in paper, and sent it to Mr. Taylor, veterinary surgeon, who at once reported the matter. On the following day Sergeant Potter called, and the carcass was then unburied, and it had to be burnt and entirely destroyed. A specimen of the animal's blood was sent up to the Board of Agriculture, and the report received was that anthrax existed. Some two years before defendant had a suspected case, and

all the regulations and obligations were then explained to him, so he could not come into court and plead ignorance.

Defendant said he had no idea that the animal had anthrax. It was not correct to say that the animal died suddenly. He treated it for over 30 hours, and thought it was for indigestion and chill. He thought the cow was getting better. Subsequently, at eight o'clock, he found her dead in her stall. He thought it would be wise to let the veterinary surgeon know. It was not two years, but three years, ago when the other cow died. The veterinary surgeon on the former occasion cut off the ear of the cow and took it away with him. In the present case he thought that if he sent for the veterinary surgeon the same evening he would not come, as it was late, and that if defendant sent the ear to him he would do all that was necessary. Defendant subsequently disinfected the stall and burnt it, also the knife, and the pocket the man took the ear in, and he considered he had done everything he could. He cut off the ear in ignorance, and thought that what he was doing was perfectly right. It was to assist the police. In cases of anthrax "they are generally dead, and you don't see them ill," rarely lasting for 30 hours.

The Chairman said the Bench did not doubt what defendant said, but they had to deal with a most dangerous and serious case from a public point of view. No doubt it was unusual for a cow suffering from anthrax to last so long as 30 hours; when the animal died suddenly at last and defendant suspected it he ought to have reported the matter at once to the proper authority. Defendant: I thought I was right in doing the same as the "vet." did. The Chairman said defendant was very wrong in cutting off the ear, and the man who took it might have contracted anthrax and died. Taking all things into consideration, they must fine defendant £3 3s. and £2 2s. for expenses.—*The Mid-Sussex Times*.

PROTECTION AGAINST FROST-BITE AND OTHER EFFECTS OF EXPOSURE OF THE EXTREMITIES TO WET COLD (LOCAL FRIGORISM).

[The following is a portion of a long article in the *Brit. Med. Jour.* of Dec. 18.]

Adequate feeding, perfect circulation, moderate muscular exercise, good general health, warm clothing, all tend to give to the body its maximum power of resistance to cold. It is obvious that anything that tends to impair the nutrition and activity of the tissues, and to interfere with the freedom of circulation, is favourable to the occurrence of frigoris. Tightness of the clothing of the extremities—for example, tight boots, socks, leggings, puttees, etc.—is particularly detrimental. Heavy clothing and other equipment, by increasing fatigue, has also a predisposing influence.

Warm clothing does not mean heavy and thick garments, but clothes capable of keeping imprisoned near the surface of the body a fairly thick layer of air. It is generally recognised that several layers of light woollen or other fabrics form a particularly efficient protection against cold air when the air is not in a state of rapid motion. Common experience has also shown that a layer, however thin, of some material impervious to wind, worn outside ordinary clothing, is the most efficient protection against cold draughts and winds. Paper, mackintosh, skins, closely woven fabrics worn outside ordinary clothes have all been extensively used for this purpose.

For protection against cold water, it is necessary that the external covering should be impervious to and not affected by water. India-rubber stockings, waders, and boots have been used extensively by anglers and men

working in water and mud, not only as a protection against wet but also against cold. For the same reason sailors and others have had resort to oilskin.

When at the beginning of the winter of 1914-15 a number of soldiers were invalided owing to the effects of exposure to cold, there must have been some reason why advantage had not been taken of these well-known methods of protection. On consideration it appeared to me that the main reasons were that the articles on the market at the time were too heavy, too cumbersome, too expensive, too perishable, and generally incapable of being adapted to the present requirements of the soldier.

It occurred to me that a suitable article might be made of a thin fabric rendered waterproof by means of oxidized linseed oil. After several weeks' trial I succeeded at the beginning of January, 1915, in manufacturing by simple means thin and soft oil-silk which could be made into absolutely waterproof bags by means of apposition seams.* These bags were used successfully in a number of experimental tests.

The same material and method can also be employed for manufacturing very light waterproof coverings for various parts of the body, a matter of some importance, since the protection of the body as a whole against losses of heat is of great value in increasing the resistance of any part of the body against local frigoris.

Many experiments were made to test the permeability of oil-silk of various thicknesses to water, and the effects of addition to the oil of resins, neutral fats, paraffin wax, etc., with the result that linseed oil boiled with a lead salt gave satisfactory results when the oil-silk was of moderate thickness.

The methods finally used by me in the laboratory, though comparatively simple, required strict attention to several details, such as the selection of the fabric, the size and uniformity of the meshes, the composition of the "boiled" linseed oil, the duration of exposure to various temperatures, the shapes permitting of sound apposition seams being made, the thickness of the oil coating etc.

I had some difficulty in convincing practical men of the possibility of manufacturing oil-silk bags at a moderate cost, until I met Mr. H. Storey of Lancaster, who took a great interest in the matter. Some modifications which appeared to be convenient for manufacturing in bulk proved disappointing, and led to serious loss of time, for when rather late in the year the opportunity of trying the bags on a large scale occurred, certain defects were discovered from which the bags manufactured in the laboratory early in the year were free. It has been found necessary, therefore, to return to my original methods.

Bags prepared in this way can be immersed in boiling or in ice-cold water without any appreciable damage to the material or to the seams.

Properly prepared oil-silk offers considerable resistance to alcohol, ether, chloroform, acetone, benzol, petroleum, solid or liquid neutral fats, 1 to 2 per cent. watery solution of nitric, sulphuric, and hydrochloric acids, mercuric chloride, iodine, phenol, chlorinated lime, izal, etc.; it is attacked by 2 per cent. watery solutions of the alkalis, and also, but more slowly, by soap. Oil-silk bags can be kept for many months without undergoing any material change.

Although the material is wetted by water, its permeability is very slight, and water can be kept inside an oil-silk bag for weeks without any apparent wetting of the external surface. Artificial wetting of the external surface of a bag containing water under pressure

is not followed by any appreciable oozing; the wetted surface dries rapidly.

The addition of paraffin wax or of a neutral fat to the linseed oil prevents wetting of the material by water, but does not appear to increase as much as could be expected the impermeability of the fabric to water.

Thin oil-silk bags, after being creased and submitted to friction for some time, usually show evidence of some superficial damage. This is made evident when the bag is filled with water, by a slight oozing of the fluid through the damaged parts. This defect can be completely remedied by painting the surface of the bag with a layer of quick-drying linseed oil: after exposure to a current of air for a few hours the waterproofness of the bag is restored. A solution of nitro-cellulose in a solution of acetone and acetate of amyl adheres firmly to the oil-silk when dry. A tear in the oil-silk can be easily mended by fixing over it a piece of silk by means of this cement. Slight erosions may also be repaired by painting a thin coat of the same material over them.

The bags I used for the purpose of the practical tests conducted during the early months of 1915 extended up to the knee, and could be worn for twelve or fifteen hours at a time without discomfort and without undue condensation of perspiration. When, in later experiments, bags reaching up to the hip were used, it was found that, especially after a march, abundant condensation of water from perspiration took place on the inner surface of the bag, and that this water of condensation gradually gravitated into the foot portion. This accumulation of water round the foot reduced to a considerable extent the protection afforded by the bag.

It is obvious that if the use of long bags is essential, these bags should not be worn during long marches, or if they must be worn, their length should be reduced by suitable method of folding during the march. They may also be lined with some absorbent material preventing the water of condensation running down. The use of an absorbent lining should, however, be resorted to only if other methods are insufficient, for one of the advantages of the oil-silk bag is the ease with which it can be thoroughly cleaned both inside and out. I do not think, however, that waders of any kind are suitable for wear during long marches. What is important is that the men wearing them in the trenches should be able to leave the trenches and march or run without the waders interfering with the freedom of their movements. One of the essential conditions for success is that the foot and leg should be left entirely free from pressure causing any sensation of constriction or tightness or any interference with the freedom of circulation. The foot should be dry and warm when the wader is put on.

Large boots and large socks are indispensable; the inner woollen sock should be thick, the outer sock should be large enough to draw easily over the oil silk bag. It should not be made of a material liable to shrink when wet. In the first tests I conducted both the inner and the outer socks were woollen.

The use of a waterproof covering that can be worn inside the boot is recommended in this communication not because it is the only or even the best possible method. A waterproof top boot so devised as to leave a fairly wide air space between the boot and the greater part of the foot, ankle, and lower part of the leg would be more efficient and probably more convenient, provided the material used was light and did not interfere with movements.

The object of this paper is to show that it is possible to secure a sufficient amount of protection against the effects of wet cold without discarding the boots at present supplied to the army, provided the size of these boots is adequate.

* Sewing renders the waterproof material useless, so that sewn seams cannot be used.

Cruelty Charge dismissed.

At Kingstown Police Court on Thursday, 20th inst., before Mr. Macinerney, K.C., the National Society for Prevention of Cruelty to Animals charged Mrs. Rose Anne Byrne, Shanganagh House, Shankill, with cruelty to a horse by working it while in an unfit state and suffering from a raw sore.

Wm. Redmond, Inspector to the Society, conducted the prosecution, and Mr. Joseph O'Connor (instructed by Mr. Jas. Magee, solicitor), defended.

The inspector's evidence was that he saw the horse drawing an empty cart on November 10th at Kingstown. A veterinary surgeon saw the animal on the 14th. The horse was 30 years of age.

Cross-examined by Mr. O'Connor, Redmond admitted he did not go to see Mrs. Byrne until December 8th. He was waiting by order of the Society to give the defendant an opportunity of destroying the animal. Mr. Kelly, v.s., Dublin, saw the horse on the 10th December.

Mr. M. Barlow, v.s., Bray, stated that he saw a brown mare in Mr. Byrne's premises on November 14th. The mare was very old and in very poor condition. Witness saw the animal again yesterday, and it had considerably improved.

To Mr. O'Connor—There was a sore on the right hip, more or less superficial, and bald. The mare was physically capable of drawing an empty cart, but was not in a fit condition for working.

Mr. Macinerney: Surely the best proof that she was able to do the work was that she did do it. You don't require any mental qualifications for a horse to draw a cart.

Mr. Doyle, veterinary surgeon to the Society, said he had seen the horse with Mr. Barlow yesterday. He believed the horse to be at least 30 years of age. He judged the age by the angle of the horse's teeth and by the fact that they were almost rounded off.

To Mr. Macinerney—I could tell the age of a horse after 30, and any veterinary surgeon could.

Mr. Macinerney: I am very glad science has advanced so far. I understood that seven or eight years was the greatest age that could be told by the position of the teeth.

Cross-examined by Mr. O'Connor on the movement of the horse's teeth, witness said the angle changed progressively from after the tenth year. In 20 years they would move about $1\frac{1}{2}$ inches. The horse's condition when he saw it yesterday was fair. He could see the remains of an old sore on one of its hips, but he saw no bald patch on either hip. The animal had had a rest.

Michael Byrne, son of the defendant, swore there was no sore on the horse when it was sent to Kingstown on the 10th November, and it was in perfect condition. There was a bald patch on the right hip where it had injured itself in the stable eight or ten months previously. The animal was purchased by his mother about fifteen months ago for £20. When the inspector came on the 8th December he (the inspector) did not say a single word about the horse having a sore on the hip. There was another mare, a chestnut, about which witness was summoned in Bray. It was this mare that Mr. Barlow examined for the society.

Mr. John Kelly, v.s., Earlsfort Terrace, Dublin, said he examined the animal in question at Mrs. Byrne's place on the 10th November, and he saw no reason for slaughtering the animal. There was not a man alive who could tell the age of a horse after 12 or 14 years.

Mr. Macinerney: Well, I always thought so until to-day.

Witness continued to the effect that the horse was perfectly fit to do the work it was doing, namely, farm work. On the right hip joint there was a mark of an

old lesion, about two years old, but not the slightest sign of any recent sore. The spot was bald, and would remain so. The horse was about 12 years of age, and could work for many years. It was ridiculous to say the horse was 30 years of age.

Mr. Macinerney dismissed the case, and allowed the defendant two guineas costs.—*Dublin Evening Mail.*

VICTORIA VETERINARY BENEVOLENT FUND,

Dear Sir,—May I ask of your indulgence in publishing a list of Subscribers to a fund raised by Mr. W. L. Little, F.R.C.V.S., and Mr. John Brown, F.R.C.V.S., of Invergordon, Veterinary Officers working for the British Remount Commission in the United States of America and Canada.

The total of the subscriptions received only from the Veterinary Officers of the Commission, were to be equally divided between the Victoria Veterinary Benevolent Fund and Mrs. Moore's Army Veterinary Corps Comforts Fund.

It will, of course, be a source of congratulation that such a splendid effort has resulted in the fact that either funds have benefited to the extent of £33 2s. 6d., and that while the widows and children of Veterinary Surgeons can be helped, the care of the soldiers in the field has not been forgotten.

My Council desire to express their heartiest thanks to the Subscribers, to Mr. Little, and to Mr. Brown, for their efforts, and we at home are aware that Mrs. Moore, on behalf of the Army Veterinary Corps Comforts Fund, is extremely grateful.—Faithfully yours,

W. SHIPLEY, Hon. Sec.

Southtown, Gt. Yarmouth,
January 29th.

List of Subscriptions to the Lathrop Fund for a New Year's Gift to the Victoria Veterinary Benevolent Fund and Mrs. Moore's A.V.C. Comforts Fund:—

Lt.-Col. Deacon, P.V.O.	J. Snider	\$6.50
\$10.00	S. E. Boulter	6.50
Lt.-Col. Drage	L. A. Brown	5.00
10.00	K. D. Sewell	5.00
John Brown	P. R. Thompson	6.50
10.00	W. Sheriff	6.50
H. Tudor Hughes	E. H. Stent	6.50
6.50	F. Thatcher	6.75
Jas. Gregg	W. L. Little	6.50
6.50	P. McGregor	6.50
E. H. Stent	H. F. Reynolds	6.50
6.50	J. Hart	6.50
F. Thatcher	J. M. Courtwright	6.50
6.75	Capt. Spanton	10.00
W. L. Little	P. A. Gough	10.00
6.50	R. A. McLoughry	6.50
P. McGregor	J. Goldbrown	6.50
6.50	Tylney Haig	10.00
H. F. Reynolds	J. J. Murison	6.50
6.50	J. King	6.50
J. Hart	P. Macquire	6.50
6.50	John McBirney	4.50
J. M. Courtwright	E. C. Winter	6.50
6.50	M. J. Preston	6.50
Capt. Spanton		\$314.75
10.00		
P. A. Gough		
10.00		
R. A. McLoughry		
6.50		
J. Goldbrown		
6.50		
Tylney Haig		
10.00		
J. J. Murison		
6.50		
J. King		
6.50		
P. Macquire		
6.50		
John McBirney		
4.50		
E. C. Winter		
6.50		
M. J. Preston		
6.50		

"and veterinary science"

"Agricultural education in the present day is an altogether different thing from what it was, say, a hundred years ago. In those days what is called "rule of thumb" reigned supreme, while to-day no man can be called agriculturally educated unless he has a knowledge of chemistry, botany, and veterinary science." [From a letter in *The Scottish Farmer*, by Mr. J. Lyon Guild.]

Nominations to Council R.C.V.S.

In usual course, the voting papers for members resident abroad will be issued early in the present month: and will carry the names of all members who have been nominated. Those now appearing on the nomination list are:—

Burt, W.	Pringle, R.
Clarkson, J.	Thomson, H.
Garnett, F. W.	Share-Jones, J. T.
M'Fadyean, J.	Trigger, R. C.

Presumably the members on service in France and Belgium are well within the fifteen days' limit (Byelaw 5). Those in Greece, Egypt and Mesopotamia would not, though it might be possible to give them a fuller opportunity to record their votes—if there be further nominations in the interim—by a duplicate issue of the papers.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donation for 1916 to the College funds:—

Mr. E. McSwiney, Cork	£1 1 0
Mr. T. V. Pettifer, Tetbury, Glos.	1 1 0
Mr. C. A. Squair, Reigate	1 1 0
Mr. E. C. Hobbs, Newport, Mon.	1 1 0
Mr. W. H. Bloye, Plymouth	1 1 0
Mr. T. S. Price, London	1 1 0
Amount previously acknowledged	6 0 0
	£12 12 0

Personal.

HICKS.—On the 30th Jan., at Moorcroft, Chelmsford, the wife of H. Hicks, M.R.C.V.S., of a son. Indian papers, please copy.

OBITUARY

GEORGE KING WAKE, M.R.C.V.S., East Dereham, Norfolk. Graduated, Lond.: April, 1862.

Mr. Wake died on Jan. 20th, 1916, aged 75.

ALEXANDER GILLESPIE, M.R.C.V.S., Newcastle-on-Tyne. 1861; Graduated, Edin.: Aug. 1879.

Death occurred Jan. 23, 1916, aged 75.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Jan. 27.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieuts. relinquish their commns.:—E. J. Nicholson (Jan. 15), H. Bidlake.

To be temp. Lieuts.:—J. B. A. Hare (Jan. 15); T. W. Smith, H. Jewell (Jan. 16); W. J. Moody, F.R.C.V.S., J. E. Syme (Jan. 17).

Jan. 28.

Temp. Lieut. F. D. Early relinquishes his commission on the termination of his engagement (Jan. 29).

Jan. 29.

Temp. Lieut. to be temp. Capt.:—C. Armstrong (Jan. 18). To be temp. Lieuts.:—A. O'Neill (Jan. 17); W. Hay (Jan. 18).

Feb. 1.

Capt. H. C. Stewart to be temp. Major whilst asst. Dir. of Vet. Svces. of a Division (Dec. 4).

Lieuts. to be Capts.:—W. H. Thomas, B. R. Body, G. A. Kelly, G. F. Steevenson, F. B. Hayes, F. Hogg, G. V. Golding, H. D. Lewis, D'A. S. Beck, H. Stephenson, T. L. Shea, H. E. A. L. Irwin, T. J. Davis, J. Going, U. W. F. Walker, C. Davenport, S. W. Marriott, F. J. Weir, J. Smith, C. M. Stewart, G. Williamson, J. R. Ellison, R. M. Bamford, S. O'Donel, A. A. Fryer, J. J. Mills, C. J. R. Lawrence, R. H. Knowles, C. H. S. Townsend, J. J. Plunkett, A. G. Lalor, S. L. Slocock, W. A. I. Buchanan, P. S. Sparling, R. Chown (Sept. 3). To be temp. Lieut.:—W. Watt (Jan. 19).

Feb. 2.

Temp. Lieut. to be temp. Capt.:—J. Gosling (Jan. 7).

SPECIAL RESERVE OF OFFICERS.

Jan. 29.

The following Lieuts. (on prob.) are confirmed in their rank:—W. Shipley, T. Menzies, A. Munro, P. R. Turner, R. J. Stow, G. E. Oxspring, J. M. Culhane, P. Howard, R. C. G. Hancock.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Jan. 27.

To be Capt.:—Capt. W. H. Savage, from the Welsh (Carnarvon) R.G.A. (Jan. 28).

The A.V.C. Comforts Fund.

Dear Sir—I have pleasure in again forwarding further particulars of subscriptions and gifts received since previously published list in your issue of January 15th. I have been asked by many interested in the work of the Comforts Fund to give some account of what the Fund has already accomplished since its inception more than a year ago. I therefore have made out a short statement which I trust you will be able to find space for. I hope, however, later in the year, to again have the privilege of laying a more detailed account of the work accomplished by the Comforts Fund before the subscribers at a public meeting; as was done last year the following particulars, will, I feel sure, be specially interesting to those kind supporters of the Comforts Fund who have given so generously and worked so industriously, and who thus by their efforts have enabled me to supply in some small part the needs of our men on active service. Yours truly,

ADELAIDE M. MOORE.

Strathyre, Parsifal Road,
Hampstead, N.W.

February 2nd.

Further Contributions received to Feb. 4th:—

Lieut. R. Mackenzie, A.V.C., T.F.	£1 1 0
per Mrs. Rutherford (Capt. Lewis Green, A.V.C., T.F.)	10 6
Mrs. Abson (Sheffield)	2 2 0
Mrs. Baird (Edinburgh): proceeds of Entertainment and subscriptions as collected	55 0 0
per Mr. Wm. Shipley: share of gift from veterinary officers with Lathrop Remount Commissions, U.S.A. (list of names of officers as published by Mr. Shipley)	33 2 6
	£91 16 0

Gifts received from and work done with materials as supplied:

Miss Hinxman: Shirts, mufflers, gloves, mittens, helmets. per Mrs. Lattay and Mrs. Quinlan (St. Alban's Working Party): Mufflers, mittens, helmets, etc.

Mrs. J. Nunn : Mufflers. Mrs. McGowan : Socks
 Mrs. Hodgson : Mufflers. Mrs. Hobday : Mufflers, mits
 Mrs. Fowler : Mufflers, mits and socks
 Mrs. Garnett : Mufflers, mits, helmets, socks
 Mrs. Porteous : Mits, mufflers, socks
 Miss Welborn : Socks, helmet, mits
 Mrs. Murphy and Mrs. Sydney Marriage : Mufflers,
 helmet, socks, mittens
 Mrs. Wooley : Mittens, helmet, waistcoat, socks
 Mrs. Leckie : Shirts, cuffs, mufflers, mits, socks.
 Mrs. Bolton : Mittens. Mrs. Recard : Mufflers
 Mrs. Crawford, Mufflers
 per Mrs. Quinlan and Mrs. Lattay : Mufflers, mittens
 Mr. William Moore : Socks, belt, helmet, mittens.
 Mrs. F. T. Harvey (St. Colomb, Cornwall) : Socks,
 mittens, caps, mufflers, belf, shirt, pyjamas
 Mrs. Hobday : Mittens
 Mrs. A. Edgar : Socks, mittens, muffler
 Mrs. Ascott : Mufflers, socks, mits, books, magazines
 Mrs. R. N. Lewis : Belts, mufflers, helmet, socks, mits,
 cuffs
 Mrs. Pritchard (and Working Party) : Socks, helmets,
 mufflers
 Mrs. D. Weir : Socks, mufflers, gloves, mittens
 per Mrs. Ware (Epping), from Mr. F. Ware, Indian
 Civil Veterinary Dept., Madras, India : 7 flannel
 shirts, 12 mufflers, 2 sweaters, 8 prs. socks, 3 helmets,
 3 prs. mittens
 Mrs. Barber (Brewood) : Mufflers, helmets, socks,
 mittens
 Mrs. Clayton (Jersey) : Mittens and cap
 Mrs. Fennell : Socks. Mrs. Sheldon Jones : Socks
 per Dr. Charnock Bradley : Mufflers
 per Col. Queripel, from Mrs. G. H. Golding (East-
 bourne) and Mrs. Toope (Devon) : Parcel of gifts
 Mrs. Kirkby : Helmets, caps, mittens
 Mrs. Shipley : Mufflers, helmets, mittens, socks
 Mrs. Walker (Alton) : Swabs, socks, mittens
 Mrs. Over (Rugby) : Scarves, bedsocks, mittens
 Mrs. W. S. Walker (Kirkby Lonsdale) : Socks, mufflers
 Mrs. Marks : Helmet

Articles as supplied *October, 1914, to April, 1915*,
 stated in my Report of the Work of the Comforts
 Fund as laid before the subscribers at meeting, Royal
 College of Veterinary Surgeons, June 2nd, 1915, sent to
 Army Veterinary Corps men on active service in France
 and Flanders :—

450 shirts	1550 pairs socks
1500 mufflers	380 vests
380 pants	600 caps and helmets
500 belts	1620 prs. mits. & gloves
100 cardigans & waistcoats	360 jerseys
300 blankets	500 inside soles for boots

And as received in *grant* from Indian Soldiers' Fund
 for the Indian personnel of Veterinary Hospitals at-
 tached Indian Force :—

100 prs. socks	1000 mufflers
500 vests	500 prs. gloves
500 prs. mittens	400 sweaters
500 prs. drawers	500 overcoats
200 helmets	200 blankets
500 shirts	

Articles as supplied to Army Veterinary Corps men
 on active service in France, Flanders and Mediterranean
 Expeditionary Forces, during the *three months, October,*
1915, to January, 1916 :—

2150 prs. socks	500 vests
1900 prs. gloves and mits.	300 pants
1400 mufflers	700 handkerchiefs
600 caps and helmets	200 shirts
100 sweaters, jerseys, waistcoats, etc., also a large miscel- laneous collection of sun shields, belts, pipes, etc.	

The Fund is sending out weekly parcels of news-
 papers and illustrated papers, magazines, etc., to each
 of the large hospitals, and also smaller parcels go to each
 of the Mobile Veterinary Sections.

Huge consignments of writing materials have gone to
 all the large Veterinary Hospitals, and smaller consign-
 ments to each of the Mobile Sections. Over 1000 books
 have been sent, besides numerous games and other gifts,
 for use in the Recreation Huts.

At Christmas, each Mobile Section received a large
 Christmas cake, which was very greatly appreciated
 by both officers and men. To each of the large Hos-
 pitals the Comforts Fund supplied fruit and other
 additions for the Christmas dinner.

To the wives and families of the men of the *Regular*
 Army Veterinary Corps now on active service abroad,
 125 cakes were despatched as a small token of remem-
 brance and greeting to them for Christmas Day. Letters
 received in acknowledgement of these cakes show how
 gratefully they were appreciated.

I may add that in many other ways the Comforts
 Fund has been able to befriend and help wives and
 families in cases of illness and trouble.

Export of Live Stock to New Zealand.

Dear Sir,—I beg to inform you that the regulations
 governing the importation of live stock into New Zea-
 land have recently been amended, and I attach hereto
 four extracts from the new Regulations, showing the
 conditions which have to be complied with in relation
 to (a) Horses, (b) Cattle, (c) Sheep, Goats and Swine,
 and (d) Dogs.

The following are the principal matters in which
 alterations have been made :—

Horses. The application of the Mallein test is made
 compulsory, instead of optional as heretofore. This
 must be applied within 30 days of shipment.

Cattle. The application of the Tuberculin test is also
 made compulsory, and such test must be made within
 30 days of shipment. All cattle must have been in the
 country for six months prior to shipment, or from
 birth.

Sheep. Within 14 days of shipment sheep must be
 dipped by thorough immersion in an approved scab-
 destroying preparation under the supervision of the
 local Veterinary Surgeon countersigning the Owner's
 Declaration. All sheep must have been in the country
 for six months prior to shipment or from birth.

Dogs. No dog may be exported to New Zealand
 unless it has been in the United Kingdom for nine
 months, or from birth.

Quarantine. The following periods of quarantine are
 imposed on live stock arriving in New Zealand from the
 United Kingdom :—

Horses	14 days	Dogs	60 days
Pigs	14 "	Sheep	28 "
Cattle	40 "		

Provided that horses which pass the Mallein test on
 arrival may be allowed to land without quarantine.

Yours faithfully,

ALEXANDER CRABB, F.R.C.V.S.,
 13 Victoria St., London, S.W. Vety. Officer.
 January, 1916.

REGULATIONS GOVERNING THE IMPORTATION INTO NEW ZEALAND OF HORSES AND MULES FROM THE UNITED KINGDOM.

Every shipment of horses from the United Kingdom
 to New Zealand must be accompanied by a Statutory

Declaration made by the shipper of such horses, setting forth the kind, number, sex, and brands or marks of such horses, and the name of the State or district in which such horses have been for the twelve months immediately preceding the date of shipment, and declaring that the horses are at the time of shipment, and have been during the preceding six months, free from all infectious and contagious diseases, and have not during the six months immediately preceding shipment been in direct or indirect contact with any stock infected with any such disease.

On every such declaration there shall be inscribed a certificate signed by a Veterinarian practising in the district in which such horses have been domiciled for the six months immediately preceding the date of their shipment to New Zealand, or from which they start for the port of shipment, certifying that he has, within the 30 days immediately preceding the date of shipment to New Zealand, examined and tested with the Mallein test such horses, and has found them free from infectious and contagious diseases.

The declaration and the certificate provided for in the above paragraphs must be delivered to the Veterinarian hereinafter required to examine at the port of shipment horses intended for introduction into the Dominion.

The Regulations for other animals differ in detail only from the foregoing. The essential points of difference are here given:—

CATTLE.—The declaration by the shipper to state "such cattle have been during the preceding six months or from birth in the country from which shipment is being made, etc."

"A certificate to be signed by a veterinarian appointed in that behalf by the New Zealand Government or a veterinarian practising in the district, etc., certifying that he has, within the thirty days immediately preceding the shipment to New Zealand, examined and tested with the tuberculin test such cattle, etc. Particulars with respect to such test, showing dosages and temperature records, shall be supplied with such certificate."

SHEEP, GOATS OR SWINE.—The declaration by the shipper to state that "such sheep, goats or swine have been during the preceding six months, or from birth, in the United Kingdom, etc."

"A certificate signed by a veterinarian practising in the district certifying that he has, within the fourteen days immediately preceding the date of shipment to New Zealand, examined, etc., and in the case of sheep or goats that he has had them dipped, under his supervision, by thorough immersion in an approved scab-destroying preparation within the fourteen days immediately preceding the date of shipment as aforesaid."

DOGS.—The statutory declaration by the shipper to state "that such dogs have been during the preceding nine months, or from birth, in the United Kingdom; that they are and have been during the nine months free from all infectious and contagious diseases, and have not during the nine months been in contact with any infected stock."

"A certificate signed by a veterinarian practising in the district in which such dogs have been domiciled for the six months certifying that he has, within the fourteen days immediately preceding shipment, examined, etc."

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.		Outbreaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended Jan. 29	7	7			3	15	92	234	10	71	200
Corresponding week in											
1915 ...	14	18			1	1	†	†	15	73	216
1914 ...	21	21			1	1	93	177	19	57	378
1913 ...	10	10			2	11	75	173	12	29	278
Total for 5 weeks, 1916	63	65			6	24	490	1338	97	385	1244
Corresponding period in											
1915 ...	88	100			3	5	†	†	79	407	1722
1914 ...	98	105			9	26	428	845	71	237	1882
1913 ...	60	71			15	70	422	1010	57	175	2280

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked:—

Board of Agriculture and Fisheries, Feb. 1, 1916

London 1, Stafford 1, Fife 13.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.		Outbreaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
IRELAND.											
Week ended Jan. 29	...	...	...	...	...	...	...	...	20	5	1
Corresponding Week in											
1915 ...	...	...	...	...	...	...	2	16	5	19	
1914 ...	...	...	1	19	...	...	3	33	4	20	
1913 ...	...	...	...	...	...	...	12	12	...	25	
Total for 5 weeks, 1916	1	5	...	...	...	...	9	85	18	37	
Corresponding period in											
1915 ...	...	...	...	...	...	...	5	69	20	99	
1914 ...	...	...	1	19	...	...	17	118	15	94	
1913 ...	...	...	...	...	...	...	49	99	24	124	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Jan. 31, 1916

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1440

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VOL. XXVIII.

VOLUNTARY SUBSCRIPTIONS TO THE R.C.V.S.

The Treasurer of the R.C.V.S. recently suggested that members should act as if our Bill had already passed Parliament, and each subscribe one guinea annually to the College Funds. He has himself set the example, and a few members have followed it; but the £14 14s. paid in the four weeks since the publication of Mr. Mulvey's letter cannot be considered a satisfactory reply to his appeal. Doubtless money would flow in very much faster in response to an official requisition from the Council; but the Council as a whole show no disposition to issue such an appeal. Instead, they prefer to fall back upon a series of retrenchments which can only be regarded as gravely impairing the efficiency of the College.

Everyone will admit that the Council may be forced to ask for subscriptions sooner or later, and there is no reason why they should not do so now. The two reasons for not doing so which were adduced at the last Council meeting are not convincing. One of them is the argument that it would be better to economise first, and then, if necessary, pointing to the economies as proof that everything possible has been done, appeal for funds to meet any deficit. Would it not be better to point to the proposed economies, which are admittedly at the expense of efficiency, as unavoidable without further funds, and appeal for funds in order to avoid them? The second suggestion is the fear that a successful appeal would be "a strong argument" against the Bill. We fail to see how it could be. The plea of indebtedness is admittedly an effective one in the hands of ministers of religion and secretaries of hospitals, and various quasi-charitable institutions; but would it be as effective from a body of professional men to the British House of Commons, which, despite its horrible faults, yet includes in its ranks many men of business capacity? Whether a requisition from the Council to the profession succeeded or failed, one fact would still remain clear—that only subscriptions from the members can keep the College afloat. Any member of Parliament could see that a compulsory subscription would at once be more just, more productive, and more reliable than a voluntary one; no success of a voluntary subscription, however great, could obscure the fact that the Bill was still necessary. There is evidence in several directions that many members are ready to subscribe *if they are asked to do so by the Council*; such evidence is afforded, for example, by the proceedings of the North Midland V.A., which we print to-day. But, at the present moment, members are waiting for a lead from the Council. So long as only a few Councilmen advocate voluntary

subscription, others openly discourage the idea, and the Council as a body makes no requisition, subscriptions are not likely to be plentiful. If it could be shown that a sufficient number of members were in favour of voluntary subscription rather than retrogressive economies, the Council might be induced to issue an appeal.

The projected economies are not yet adopted—they will come before the Council as proposed by-laws next April. There is still time, though not much, in which, by various methods, the profession may influence the Council. One—a good one—would be for veterinary societies to discuss the matter and forward resolutions to the Council. Societies which do not normally meet before April might well hold a special meeting upon so important a subject. The discussion should simply concern the immediate question of "Voluntary Subscription *versus* Retrenchment," and, as these proposed retrenchments have been published, every member should be familiar with them. Again, members may follow the Treasurer's lead, and subscribe without waiting for an appeal, and it is evident at this juncture a sum of £200 or £300 would be a valuable addition to the College Funds. If, by next April, sufficient of the societies have declared in favour of voluntary subscription, and money is still coming in unasked, the Council may at the last moment abandon retrenchment and issue a requisition. The Council alone can ask for subscriptions with a fair prospect of success. Many will respond to such an appeal who would not subscribe otherwise, and it remains for those who favour voluntary subscription to press the Council on this matter.

A PECULIAR INOCULATION-INFECTION OF SWINE.

Eduard Morton, of Borosjenő, has reported a peculiar infectious disease which he observed in two large pig-keeping establishments after the second inoculation against swine erysipelas (*Alla-torvors Lapok*). The animals were all attacked at the age of three months; and the main symptom was the falling off of the teats. The pigs kept in good appetite, and showed no disturbance of general condition. In some cases sero-hæmorrhagic moist surfaces were found at the places from which the teats had fallen, while in others the teats "dried off" like the spring shoots of trees after a frost. The mammary glands were somewhat swollen. After the falling off of the teats, the resultant defect healed by granulation and scar formation.

In many cases the disease attacked all the teats; in others, only those on one side. Healing took place without any treatment; but, as the animals were very little or absolutely no use for breeding afterwards, the disease caused considerable econ-

omic loss. The author thinks that the condition was produced by bacteria, and that the necrosis bacillus played a part among these.—(*Berliner Tier. Woch.*)

AN ASCARIS IN THE LIVER OF A PIG.

Walter Remmler, of Offenbach, has reported the following post-mortem observation made in the slaughter-house upon a pig.

The hepatic lymphatic glands were slightly swollen, and were beset with fine red streaks running in all directions, so that both upon the surfaces and in the interior of the glands a red net-work was visible. The rest of the glandular tissue was yellow-grey in colour, and was fragile and juicy. The fatty tissue attached to the hepatic lymphatic glands was filled with copious yellow-red jelly-like masses for an area measuring about $8\frac{1}{2}$ in. long, $6\frac{1}{2}$ in. broad, $1\frac{1}{2}$ in. thick. The serous membrane over this altered tissue showed no abnormality.

While making some incisions through this jelly-like mass, Remmler found that he had cut through an ascaris. This arrested his attention, as he had not yet opened the intestine. Closer examination showed that the ascaris was sticking partly in the ductus choledochus and partly in a bile duct, and that, through the latter passages, its anterior end had penetrated for some centimetres into the liver (1 centimetre=about $\frac{2}{5}$ inch).

The walls of both the ductus choledochus and the bile duct were greatly thickened, and were beset with numerous superficial haemorrhages. The two passages together, in their altered condition, formed a fairly stiff tube, into which Remmler could easily introduce a lead pencil rather more than $\frac{1}{2}$ -inch thick. At its end in the liver this tube was narrower, corresponding to the shape of the ascaris; but there it still measured about $\frac{1}{2}$ inch.

Stasis of the gall and icterus had not taken place. The gall must therefore have found its way past the ascaris into the intestine.

Beyond the lesions described above, the pig showed no abnormality. No other ascarides were found, though the intestine was cleansed and searched for them.

From the condition of the ductus choledochus and bile duct, it was evident that the ascaris must have remained a long time in them to produce the lesions.—(*Berliner Tier Woch.*)

THE ALTERATIONS OF THE MILK IN FOOT-AND MOUTH DISEASE.

J. Honigsmund has reported the result of researches he has made into this question. His conclusions are as follows.

The alterations of the milk caused by foot-and-mouth disease set in fairly suddenly (in one or two days) and gradually decrease again with the recovery of the animal and the increase of the milk yield. In the normal course of the disease the alterations in the milk persist for from ten to twelve days. The alterations in the milk are not typical for foot-and-mouth disease. The quantity of milk given decreases markedly in accordance with the severity of the disease (sometimes reaching a decrease of 50%), and does not, as a rule,

regain its former figure in a fortnight. When the udder is involved in the disease, the milk supply may be completely suppressed. The specific gravity of the milk shows no noteworthy variations. The fat-content increases considerably. The proportion of nitrogenous material undergoes only such variations as are also present in the milk of healthy cows. The sugar content is lessened. The ash content is raised. Even when fever is high, the milk shows no external alteration. Physical alterations of the milk are only present when at the same time the udder participates in the disease.—(*Berliner Tier. Woch.*)

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION. [NATIONAL V.M.A.—SOUTHERN BRANCH.]

The Annual General Meeting was held on Friday, January 28th, at the Great Western Hotel, Reading, The President, Mr. J. WILLETT, London, was in the chair; and there were also present:—Messrs. G. P. Male, Reading (Hon Sec. and Treasurer); J. R. Baxter, Lechlade; J. Parker, Faringdon (v.p.); H. S. Dunn, Reading; R. J. Verney, Oxford (Hon. Auditor), and W. Pauer, Blackwater, Members; and Messrs. Hugh A. MacCormack, London, and F. W. Willett, Staines, Visitors.

The minutes of last meeting were taken as read.

Correspondence. The Hon. SEC. announced receipt of apologies for inability to attend from Messrs. J. McKerlie, G. E. King, T. B. Goodall, Prof. Brayley Reynolds, Messrs. F. H. W. Cundell, and J. W. McIntosh.

Mr. W. Shipley, of Great Yarmouth, wrote, thanking the Association for the vote they passed on his resignation, and saying that as soon as he was able to do so he would return to the fold. He loved to come among so many friends.

A letter from Mr. E. Langford, of Shaftesbury, enclosing his subscription, and asking the meeting to accept his resignation; his health did not allow him to attend meetings, and he was going to give up practice shortly. [The resignation was accepted with great regret.

THE SOCIETY'S INSTRUMENTS.

The Hon. SEC. informed the meeting that some of the tooth instruments belonging to the Association had not been returned by the member borrowing them. He possessed the teeth shears, which were frequently in demand, and would be pleased to lend his forceps at any time, until the Association instruments are returned.

The PRESIDENT expressed the hope that the publication of this announcement in the *The Record* would lead to the return of the instruments by the gentleman who had borrowed them.

PETROL TAX AND AND MOTOR LICENSES.

The Hon. SEC. read a letter from the Chancellor of the Exchequer formally acknowledging the resolution of the Association thanking him for reducing the petrol tax to veterinary surgeons. Mr. Male added that they had got nothing off the motor licenses as yet.

He read a letter from Sir Fredk. Banbury, acknowledging the resolution of the Association thanking him for the interest he took in the matter.

ACCOUNTS.

Mr. VERNEY, the Auditor, presented his statement of income and expenditure for the year ended Dec. 31, 1915. It showed a satisfactory balance. The expenditure was considerably less than usual, and included £5 5s. to the Victoria Veterinary Benevolent Fund, and £5 5s. to the Veterinary Relief Fund.

The HON. SEC. thanked Mr. Verney very much for so kindly auditing the accounts. He was very pleased that the balance was a little more than last year. Members had forwarded their subscriptions very promptly as a whole, but a certain number were still owing—chiefly from men in the army. He asked the ruling of the meeting as to the interpretation of the resolution passed at last meeting, exempting members on active service, at their option, in regard to their subscription for 1915. Did this also apply to the 1914 subscription?

The PRESIDENT thought the resolution might be considered to be retrospective in those cases. The men who were serving had quite enough call on their funds, to meet the cost of keeping up separate establishments at home; and he thought they might waive the subscription if so desired. (Hear, hear).

Mr. VERNEY said he would be quite in favour of such members pleasing themselves. (Hear, hear).

The financial statement was then unanimously approved, on the motion of Mr. Verney, seconded by Mr. Pauer.

REPRESENTATIVES ON THE COUNCIL OF THE N.V.A.

The President, the Hon. Secretary (*ex-officio*), and Messrs. Verney and Parker, were unanimously appointed representatives to the Council of the National Veterinary Association.

CASES OF INTEREST.

Many interesting cases arising in the practice of members present were related and freely discussed.

Mr. PAUER asked the meeting to discuss the effects of serum treatment in cases of fistula and other pyæmic conditions.

Mr. PARKER said that a fortnight ago he had a case of a hunter which was staked in the scrotum: this was followed by swelling of the abdomen and then of the legs right up to the tail, when the horse died. In a similar case two years ago, of a staked mare, the animal only lived a fortnight. A *post mortem* showed that pus was running all over the body, up the muscles right to the top of the spine, which we could not understand, as there was efficient drainage. Both animals fed well right up to the last. He did not believe in the efficacy of serum treatment in these cases, or for fistula. By merely cutting the skin fistulas could be pulled out like cricket balls.

Other members agreed that they had not obtained beneficial results from the use of sera in these conditions.

Mr. MALE stated that for fistulas, gangrenous and ulcerating wounds, in France, for the human subject, they were using chloride of lime and Boracic acid as a dusting powder, which liberated Chlorine in the tissues and gave very rapid relief. Of course, they must have surgical interference as well. He had used preparations giving off Chlorine with good effect in similar conditions in animals.

Ringworm. The PRESIDENT said he was not struck with Iodine for the treatment of this disease, and when they saw confluent patches, probably the breadth of a foot each way, he had tried petrol, but did not like it. In a lot of those dressings they got acute dermatitis. His idea was that if they singed the horse every third day they would go far towards a cure, by killing the spores.

Mr. MALE said he had used a good deal of Calcium sulphide, which cleansed the local spots, but the disease spread to other parts. By washing the whole horse over with Calcium sulphide they got rid of it. Pure Jeyes' was also an effective remedy applied to the affected spots.

The PRESIDENT said Iodine in combination with petrol was recommended by army authorities; but they had to get it ready made up, and might have to wait ten days or a fortnight before they got it. Acetic acid

acted very well, but it caused a sore which took three weeks to heal.

He related an interesting case which occurred about five weeks ago. A horse slipped and fractured a femur. He was put in slings for five weeks, and now the animal was sound and returned to work. Where there was a sling-box on the place, even in broken knees or injury to the hock or fetlock, putting the animal in slings for two or three days greatly assisted recovery. When a horse stood four or five days he got tired and lay down, and he must injure himself considerably on rising again. That applied even to broken knees. The difficulty in their profession was to combat the ideas of their clients. The idea of slings seemed to frighten people. There was no displacement of the bones in this case.

The HON. SEC. related an interesting case—the complete fracture of one of the metacarpal bones in a foal which was too young to put in slings. He put it in plaster of Paris, and it made a very good recovery.

Also a peculiar case of a hackney stallion which was being prepared for the London show, and was found one morning to have lost partial control of the hind quarters, the legs knuckled over, and the horse reeled about. There was nothing to feel, and the horse was in no pain at all, but, although that was three weeks ago the horse was still showing that partial paralysis of the hind quarters. The urine was perfectly normal. He could only account for it from some injury, but of this there was no evidence.

Mr. PARKER had a similar case in a filly, but it appeared all right in three or four days. The urine was affected. He now had a case of a four-year-old thoroughbred horse, which every now and then knuckled over and went down on his hind legs from no apparent cause.

The PRESIDENT had been called that week to see a Gilbey-bred Hackney, which could not stand on one leg, and could not get it forward. He thought the horse had slipped the patella, but that was in its place. The muscles of the thigh were bunched up from cramp, but rubbing put it right.

Mr. PAUER: A Dachshund had swallowed a rubber ball, and when brought to him had been under treatment for some time in London. On manipulation, he was able to feel the ball in the abdomen, and eventually by means of forceps extracted it from the rectum.

Mr. DUNN had treated a retriever that had swallowed a golf ball which, after a few days, did not appear to inconvenience the host at all. About twelve months later the dog died from some other condition, and on a post mortem examination the golf ball was found intact in the stomach, which was dilated at the base into a small pocket to accommodate it.

Mr. WILLETT (Staines) stated that he had tried the new treatment for canker on two cases with quite successful results.

ATTESTED VETERINARY SURGEONS.

Mr. MALE raised the question of the position of veterinary surgeons who had attested for service under Lord Derby's system. He noticed that the medical profession advertised that there was a Central Committee in London to which medical men who had been attested should apply with a view to being enrolled in the R.A.M.C., so that they should not be treated as combatants by the recruiting authorities. What would be the position of veterinary surgeons? They knew that the army wanted veterinary surgeons; and it would be very much nicer that they should be enrolled as veterinary surgeons. He thought that was a matter that they should bring before the Council. (Hear, hear). A man might be called on to appear at the recruiting office and be marched off with a batch of recruits, and of course he would have to go. That need not happen if proper steps were taken. (Hear, hear).

The PRESIDENT asked if a resolution passed that day would be too late if brought before the next meeting of Council?

The HON. SEC., in reply, pointed out that there was a War Emergency Committee which was already sitting. He thought it could do no harm to bring before that Committee a recommendation that steps should be taken to enrol in the A.V.C. those members of the profession who had attested under Lord Derby's scheme.

The PRESIDENT, and other members, expressed their entire concurrence in this view, and a resolution proposed by Mr. MALE, and seconded by Mr. PARKER, was unanimously passed by the meeting.

PRESIDENTIAL ADDRESS.

Mr. J. WILLETT, M.R.C.V.S., Harley Place, N.W.

Gentlemen,—It is, I know, the custom for each newly elected President to read an address at the meeting following his election, but before doing so, please allow me to thank you for the honour conferred upon me. It is an honour that every member of this Association should hope to have, if he has any ambition at all, and whoever occupies this chair is always sure of the loyal support of the members over whom he presides. It is my misfortune to be elected at a time when many of our Association are away on active service, and, therefore, I cannot hope to have very full meetings, but may I make a special appeal to those who remain to attend as often as possible?

I hope you are not expecting a long address from me, for if you do, I am afraid you will be greatly disappointed. Personally, I think the address is the only drawback to the pleasure of the occupation of this chair. For one thing, there is no discussion permitted, therefore, I may say what I like without fear of being contradicted, and that does away with half the interest; for it is only in debate that we learn other people's ideas and correct our own. I propose to give the meeting a few short notes on matters affecting our profession which have occurred to my mind.

Without being unduly pessimistic, I am afraid we are in for troublous times during the next few years, more especially directly after the war. Many of the veterinary surgeons who have joined for that period have sacrificed their practices; others, who have been assistants will naturally endeavour to take up again their positions in civil life, but will positions be open for them? There has been an enormous development in the production of motor cars, and through the necessities of the war very serious depletion of the number of horses in Great Britain, and many firms, to my personal knowledge, although believing that horses are the more economical, have been forced to acquire motors to carry on their businesses; and when once motors have been acquired, I doubt very much if they will again revert to horses. This, without doubt, will mean a considerable shrinkage in our income.

The Royal College of Veterinary Surgeons have been strenuously working to benefit our members who have joined the A.V.C., and as a result we find that, after twelve months approved service, they get an increase in rank, with a corresponding increase in pay, and now we hear that our Territorial officers are to be placed on the same basis. This recognition is only just, and in my opinion, too long delayed; but what benefit it will be to those who already hold the rank of Captain, and have held it for some years, I must confess I do not understand.

The present financial state of the R.C.V.S. is very grave, and we notice that they are doing all in their power to economise to tide over the crisis until the new Charter is granted. It has occurred to me that our Societies might help our *Alma mater* in her difficulties, either by handing over to the Council their surplus

funds as a free gift, or lending them free of interest until their funds are adequate to meet the calls made upon them.

Now a few words as to the Veterinary Colleges. I very much doubt if there are enough graduates coming forward to properly fill one of the schools, and yet there are five trying to make ends meet, with the necessary Professors attached. One wonders where it will all end. It seems to me a great pity that such an institution as the Royal Veterinary College in a great City like London did not, some forty years ago, work on the same lines as our London hospitals, *viz.*, make it a free clinique, and hospital for the poor owner, and apply to the public for funds: whereby, the subscribers could give a letter of admittance for deserving cases. What a fine opportunity of seeing practice for the student! And there would have then been no need for taking in cases which should have legitimately belonged to members of the profession practising in that city. Again, I doubt if we should have ever heard of "Our Dumb Friends' League," and other more or less charitable institutions in the metropolis. These are able to get plenty of subscriptions from the general public, and to treat animals to the detriment of members of our profession.

To revert to members of our profession serving with the Expeditionary Forces—there have been many eulogistic letters and articles in the press, praising their efforts in saving the lives of their patients, and how well they have organised the numerous hospitals. These efforts have brought their reward, as seen by the honours gained by our men, and shown in the *Gazette* from time to time, but this only applies to the French Expeditionary Force. I notice, and I dare say you all have, too, that not one of our men has been mentioned in the despatches of the late G.O.C. Mediterranean Forces. Why this should be I don't know. For surely there are as good men at Gallipoli and in Egypt as there are in France, but unfortunately, they did not "meet the Speaker's eye," as quoted in Parliament.

I understand there are many more veterinary officers needed for the divisions of our "new army," being formed, but where they are to come from is a serious question. Anyhow, after this war is over, I believe future Presidents of this Association will never need to ask twice for a paper for our meetings. I can see Mr. P. Simpson with a paper on, shall we say, "Tapeworm in the camel," and Mr. Tennant with "Sand colic in the elephant: symptoms, treatment, etc.," or some subject equally interesting!

There are many of us who would like to go and "do our bit" at the front, but are prevented from one cause or another. What are we doing at home? We are keeping our ends up, some with much lessened incomes, but still doing our best for those who are away, and trying to benefit the community in healing our patients and preventing the spread of disease. In fact, the most interesting paper I have heard this year was from one of the members of this Association—I mean Mr. Verney—showing the work done in Oxfordshire in trying to prevent the spread of contagious abortion.

Then I notice the experimental inoculation in swine fever. If it should be successful it will be a great boon to the pig owners of this country. Again, there is from time to time an outbreak of foot-and-mouth disease. *Ad propos*, I have been told that this disease is very prevalent in France, near the fighting line, and it has been found necessary for the soldiers to have their boots and clothes disinfected before proceeding on leave home, and in some cases to give them new clothes throughout. Then again, shall we have a recrudescence of glanders in England, as a result of animals being returned from France after the war? All these matters give food for thought.

In conclusion, it is interesting to look back thirty years and compare it with now; then try and look for-

ward thirty years. Who would have thought there would be such a revolution in the ideas of the veterinary surgeon of to-day, and that he would be attending his cases in an animated oil can? Then let us think that even in the next decade we may see our energetic Secretary climbing up to the flat roof of his house, jumping into his aeroplane, and off to a case of colic twenty miles away, and, should he have forgotten the necessary medicines, turning on the tap for one ounce of petrol and one pint of lubricating oil to ease the pain of his patient.

Mr. VERNEY moved a hearty vote of thanks to the President for his address, which, he was sure, all present had very much enjoyed. He congratulated Mr. Willett, and hoped that, although their numbers were depleted, he would have a very pleasant year of office. (Applause).

Mr. PAUER seconded the resolution, which was carried by acclamation.

The PRESIDENT thanked them very much for the vote; and the business meeting closed.

An informal dinner was served at the Hotel, under the genial presidency of Mr. Willett.

G. P. MALE, Hon. Sec.

NORTH MIDLAND VETERINARY MEDICAL ASSOCIATION.

[NATIONAL V.M.A.—NORTHERN BRANCH.]

The Quarterly Meeting was held in the Grand Hotel, Sheffield, on Tuesday, January 18th. Present: Messrs. T. C. Fletcher (President), H. Thompson (Hon. Treas.), J. S. Lloyd (Hon. Sec.), T. Bowett, R. Hudson, S. H. Nixon, M. Robinson, S. E. Sampson.

The minutes of the last quarterly meeting were confirmed on the proposition of Mr. M. Robinson, seconded by Mr. S. H. Nixon.

The report of the general meeting held January 4th, 1916, was adopted, on the proposition of Mr. M. Robinson, seconded by Mr. S. H. Nixon.

The President (Mr. T. C. Fletcher) proposed, and Mr. S. E. Sampson seconded, that Messrs. J. ABSON, B. P. BOYLE, W. BROWN, A. D. MORGAN, and J. H. YATES be elected Honorary Associates of the North Midland Veterinary Association during the period of the war.

The resignations of Mr. H. R. Laycock and Mr. H. W. Dawes were accepted.

The question of contributing to the Anglo-Franco-Belgian Veterinary Relief Fund and to the Victoria Veterinary Benevolent Fund was left over.

An apology for inability to be present was received from Mr. E. Marrison, of Bakewell.

The balance sheet and financial statement was submitted by the Hon. Treasurer, and was approved on the motion of Mr. Robinson, seconded by Mr. Bowett.

PRESIDENTIAL ADDRESS.

Mr. T. C. FLETCHER.

Gentlemen,—Permit me to thank you for the honour you have done me in electing me as President of the North Midland Veterinary Association for the coming year. The duties, I know, will be of a pleasurable kind, because I am assured of your support in carrying those duties out. This Association is only a young one, and it behoves us to put all our energies into keeping it alive and energetic enough to be of use to the profession to which we belong, and to the advance of this particular Association. It is unusual, I know, to discuss presidential addresses, but if I might depart from the usual procedure I should like to throw mine open to discussion, so that any remarks I may venture to give may call

forth opinions for or against, and that each one of you may give your mind an airing upon the subject.

The financial position of the Royal College of Veterinary Surgeons, as disclosed at their meeting on January 7th, and reported in last week's *Record*, is one that must cause us "furiously to think," because from the reading of the report of the Chairman of the Finance Committee it is plain that bankruptcy stares us in the face, and is only a question of time. Why should not the profession act as though the Bill had passed, and subscribe £1 a year each member (not a guinea—which is a relic of old times); why should not we be asked to subscribe this amount and fill up a form promising so to do until the Bill becomes law and option becomes no choice? That it would be freely responded I have no doubt, and were the appeal made in direct form to each member, and not through the medium of the veterinary press, I think few of us would hesitate to save our College from coming under the powers of an official receiver.

One is pleased to read that the Council of the Royal College of Veterinary Surgeons has at last taken seriously into consideration retrenchments in the finances, because it has long been evident to anybody not on the Council that the cost of the examinations has been exorbitant, and could and should have been cut down years ago.

Let the Council of the Royal College of Veterinary Surgeons show that they are in earnest in their endeavours to make both ends meet, and the members of the profession will assist them.

It would be impossible in a Presidential address to leave out a reference to the war, because the depleted attendance at our meetings brings home the fact very vividly to those of us who are left at home, and we hope when our members come amongst us again they will open forth and tell us some of their experiences in this, the greatest war in the world's history. At present, these observations are conspicuous by their absence—even subjects that I know would be passed by the Censor have not reached us.

The question of drugs used in our routine practice is one that must call forth some remark, as some that were in occasional use have become practically unobtainable, whilst all have risen in price. What are we to use in place of Sodae salicil for rheumatism? Of the obtainable drugs that we have in constant use, Opium is at 40/- per lb., Pot. Iod. 19/-, Chloral hydrat. 17/-, Quinine 5/2 per oz., Cantharides 16/- per lb., Pot. Brom. 30/-. The civil veterinary surgeon with a desire to do the best for his patients must view with alarm the rising prices, and consider whether he is justified in sticking to the prices he has formerly charged his clients for their stock medicines.

Motor traction has become a serious menace to one side of our professional livelihood, and the dearth and increased price of working horses is inducing many of our clients to make the change, and once having made the change they will never go back to the use of horses again. Many members of the profession think that other fields of duties will be thrust upon us, such as increased cattle practice, attention to other domesticated animals, veterinary preventive medicine, etc.; but I am not so optimistic, for I find the owners of farm stock are becoming more educated to the diseases incidental to their stock, and less inclined to call in professional aid. Canine practice is a good source of income in towns, and should be paid attention to by us, but it is of no account in country districts.

I am afraid I have rambled in my address to you this evening, but you must forgive me. There are many points I could have touched upon, all of interest to us, but there is an interesting subject to be brought before you to-night by Mr. Hudson, and he merits most of your consideration.

I thank you, Gentlemen, for a patient hearing.

Mr. S. E. SAMPSON: I think the address which we have just listened to from our worthy President is of very practical value coming from a man of his experience, and I welcome his suggestion that we should discuss it. Undoubtedly his opening remarks with regard to the financing of our College refer to practically the greatest thing we have in front of us to-day, and one can hardly express, perhaps, surprise enough that our Council has not taken any steps of retrenchment before. We have seen examiners going to different centres where there have been only one or two students to examine, and the expenses had been excessive for the number of students to be examined. Some favour one centre and some another, and if it were not for the influence of some of the schools we should see one centre of examination for the United Kingdom, which I, personally, think is the proper thing. If I might be allowed to go a little further, speaking with regard to the Council, I should have liked them to have made some suggestion as to what ought to be done by men in the profession who are of military age, and who are liable to be called upon for service. There are men of military age who have no lead from the Council as to what to do—whether to be attested, or not. I think some suggestion might have been made as to taking a poll of the districts to see who could be spared. I should very much like to see something done in this matter. Perhaps the members of the Council are above military age, and it has not struck them. I thank Mr. Fletcher for his address.

Mr. J. S. LLOYD: Mr. Sampson has just touched upon the two things which I had intended to speak on, and whilst confining my remarks to these things I hope some members will take up any other point Mr. Fletcher has raised, and discuss it if they think fit. In regard to the financial position of the Royal College of Veterinary Surgeons and retrenchment, I believe that the question of having one centre of examination has been mentioned several times, but the statement has always been trotted out that they cannot do that without a further Bill. The present Bill, to my mind, always has been and always will be, something to take a guinea out of each veterinary practitioner's pocket every year, and give nothing in return.

I wrote on the subject when it came forward the first time, and suggested that they should issue an invitation to all members to give some subscription to help the finances of the College, but they have gone on the lines of forcing the Bill. Why do not they put in a clause empowering them to hold the examination at one centre? There is no question as to the advisability as regards the student of the College. If one centre were adopted the students would all be in a strange place, and the conditions would be equal. The students who are being examined at the place where they receive their tuition have a great advantage over men who have to travel. If everyone was to be on the same level, and the examinations were held at one place quite away from the Colleges it would be a great advantage. If it is necessary to get Parliamentary power for this it would be advisable to drop the present Bill, and draft a new one embodying this power.

In regard to the second matter—the question of attestation of veterinary surgeons—I must say that I am distinctly surprised the National Veterinary Association have not taken this up. If there is anything they could do it is this—they could have called a Council meeting at a central town to discuss the matter, and communicate the decision to the members of the profession.

These are the only two matters which have struck me in regard to Mr. Fletcher's address, and I think that perhaps if we could see our way to send some resolution to the National Council on these lines I should be prepared to move a resolution. I would like to say before I sit down that we are very much indebted to Mr. Fletcher for accepting the Presidency and for his address, and I

do express the hope that all the members who can possibly attend will do so and support him. I move that our best thanks be given to Mr. Fletcher for his address.

Mr. T. BOWETT: Mr. President,—I understand that you made some suggestion that members of the profession should send a subscription of £1 to support the Royal College of Veterinary Surgeons. Have you any suggestion as to how the members of the profession should be approached and the scheme started? Would our Association make some effort to solicit subscriptions?

The PRESIDENT: I hoped that some member would propose that the Royal College be written to, suggesting that they should circularise each member of the profession, asking them to promise a subscription until the Bill becomes law.

Mr. ROBINSON: I have great pleasure in seconding the vote of thanks proposed by Mr. Lloyd to Mr. Fletcher for his address and for accepting the Presidency in these very bad times, and I do hope the members will rally round him and come as often as possible. I know there are great difficulties at present, and many things arise, often at the last moment, which prevent members from attending our meetings.

The vote of thanks was carried with acclamation.

The PRESIDENT: Gentlemen,—I thank you very heartily for your vote of thanks for my Presidential address. I think I have opened out a new idea with regard to Presidential addresses, in throwing mine open to discussion. Presidential addresses are always difficult to write, and it is difficult to give one without knowing that there are some points in it which might call forth diverse expressions of opinion, such as the Association giving recommendations to the Council of the Royal College. I think it would not be amiss if this Association were to pass some form of resolution giving our decided opinion as to whether we view with favour the form of subscription that should be taken to save the Royal College from bankruptcy.

Then again, the matter of the release of students and practitioners is another point in reference to which some resolution might go from this Association.

It is not for me to enlarge upon my address, because had I more time, and had not had to write it, I, perhaps, could have given you a better address than the written one, but I am open to receive, and shall be pleased to have, any resolution.

I thank you very heartily for the kind words which you have said with reference to my year of office, and I trust that we shall not always have the small meeting that we have to-day. The time for which the meeting has been fixed for to-day has, to my mind, a lot to do with the small attendance.

SOME SURGICAL CASES.

Mr. R. HUDSON, F.R.C.V.S., Retford.

Mr. President and Gentlemen—When yielding to our Hon. Secretary's request for a paper I must confess I did so more from a sense of duty than pleasure, because during the anxious time we are passing through one finds it difficult to bring to bear the necessary concentration of thought and work which a paper needs. The subject I originally intended to deal with would not take shape, so I have fallen back on a series of surgical cases which I hope will be of interest to you.

ABSCESS IN THE INFERIOR MAXILLA.

The animals affected are usually young ones, and likely to be suffering from dentition trouble. Two cases have recently been brought to my notice, one a Shire colt, the other a pony, both rising three years old. In the first case the swellings shown were about the size of a cocoa-nut, on the near side, extending upwards to a little above the sub-maxillary artery. Some pain was

shown on manipulation, and a small hole covered by dry discharge was found in the centre, at what would be the edge of the bone. A similar condition existed on the off side, but the enlargement was much smaller. A small hole existed from which pus leaked. The owner informed me that the enlargements had been bursting and healing for several months. The symptoms pointed to an abscess cavity in the bone, so I decided to cast the colt and open up the cavity. Five per cent. solution of cocaine was injected at several points over the lower surface, an elliptical piece of skin about 4 by 2½ ins. was removed, along with the underlying connective tissue and a cartilaginous substance, then a hole sufficient to admit four fingers was chipped with mallet and chisel into the cavity. About 8 oz. of stinking pus was released. Examination of the interior revealed the roots of molar teeth, granulation tissue and bands, but I could not detect any necrotic area, though such might be present. The cavity was swabbed out with iodine, and later washed out with a weaker solution—1 in 8—but it still smells badly, though the discharge and enlargement is much less. I am endeavouring to bring about a healthy secretion and keep the cavity open until it is reduced by contraction of the walls and the production of granulation tissue.

The second case showed an enlargement on one side about the size of a hen's egg and a small hole through which foul pus leaked. I injected the hole with tinc. iodine, but the injection was retained, so I enlarged the hole to the size of half-an-inch, when I was able to flush it out satisfactorily. It has made slow but good progress. The swelling has become reduced in size, but there is still a little discharge.

SLIPPING OF THE FLEXOR PEDIS PERFORATUS TENDON OFF THE POINT OF THE OS CALCIS.

Although rare, I should like to relate this case because of the remarkable coincidence which happened in connection with it. The subject was a posting mare, and the condition had become so bad that she was useless for any work. When weight came on the leg she was unable to hold the hock rigid, and so the quarter sank. The perforatus tendon was observed to slip outwards until held by the branch of the gastrocnemius tendon, which had doubtless become stretched. The condition had come on gradually, eventually becoming so bad that the owner decided to have her shot. This decision was arrived at on a Saturday. On the following afternoon I picked up *The Veterinary Record*, and about the first thing that attracted my attention was a translation from an Italian paper of an operation on a similar case. I had not seen or heard of the condition before.

As the mare was to be destroyed on the following day I visited the owner and arranged to carry out the operation as described by the Italian veterinary surgeon. The operation suggested was: the division of the perforatus tendon between the hock and fetlock, and point firing deeply the side of the Os calcis where the tendon slipped over.

The operation was carried out, and the mare rested seven or eight weeks. When put to work no slipping of the tendon could be seen, though the quarter sank a little lower than the other. She pulled a bus about for two or three years, but I forget what happened to her.

The operation of *Tenotomy for contracted tendons* was once very fashionable judging by the opinion of old writers, but with me results have been very varied. One case, almost as soon as the wounds were healed (about a week), commenced to contract again so rapidly that in about fourteen days the animal could scarcely balance himself, and had to be shot. There did not appear to be any active inflammatory process going on in the tendons.

FRACTURE OF JAW IN THE DOG.

No. 1. An old Sheffield workman living in Retford, brought to me one night a racing whippet which had been run over by a motor car. The upper and lower jaws were fractured. The fracture of the upper jaw separated the incisor teeth in the middle line, pushing out the teeth *en masse* on one side as far as the canine. The opening between the central incisors would be ½ in. The gum and palate were broken through for some distance. The lower jaw was in two pieces, the fracture occurring in the middle line between the central incisors. The teeth were not loosened or broken individually. I advised the owner to have her destroyed. He was very upset, and told me she had been one of the best at her game, and would be worth £8 or £9 as a brood bitch. The old man seemed so fond of her that I decided to try and put the fractures together. Having administered an injection of ½ gr. Morphia and waited until it acted, I pressed the upper incisors almost into position and bound them with silver wire to the canines. I bound the lower incisors in the same manner, then bringing the upper and lower teeth together in a proper grip I bound them round with broad tape sufficiently tight to maintain them in apposition, securing above and below to tape round the neck. The tape required easing the second day, but was not removed until 14 days later, when a whippet muzzle was put on, and no solid food allowed for two months. During the first two weeks she was fed by spoon into the side of the mouth, taking milk or soup. It was a labour of love for the old man, but he was rewarded by an excellent recovery. The upper incisors were a little out of place, otherwise the grip was perfect.

No. 2. A large red retriever of a particularly savage disposition was brought to me with a fracture of one side of the lower jaw. She had been run into by a train at a level crossing. Examination showed it to be a clean fracture, about on a level with the premolars. The direction of the fracture was on the slant about 1 inch—the posterior half was very loose. Having had such a good result in the preceding case, I was keen on fixing this if I could; also, this being a good dog belonging to a good client, I was particularly anxious to do something. An injection of Morphia was not satisfactory in this case, so I tried Chloroform. The patient fought against it and was very excitable and difficult to manage, though, of course, tied down. Having brought him under its influence, the muzzle was removed and the divided ends of the bones brought into position. Two wire sutures were passed round the jaw enveloping the ends of the fracture. The needle entered at the lower border of the jaw, passed along the side of the bone, was brought into the mouth, between two teeth, ending again on the opposite side, keeping close to the bone, and out at the edge of the jaw where it first entered. The suture was then twisted up. A second suture was carried round the bone enclosing the divided ends in a similar way, about half an inch below. After three attempts, owing to the animal coming out of the anaesthetic while operating, I managed to get the sutures fixed satisfactorily, and bound the jaws together round the nose, as in the previous case.

The animal was fed with a syringe for a fortnight, and then given soft food only for about two months, a muzzle being worn to prevent him picking up food which would require grinding. The keeper had a trying time feeding him for the first fortnight, for of course, the animal required a large quantity of food, but he was rewarded by a good recovery. The importance of binding the jaws together in these cases will be evident to all—movement must be restricted while union takes place.

In both cases the spoon or syringe was taken to

readily, and where the patient is a favourite, or valuable, the time is well spent. The sutures were removed after four weeks by untwisting, raising a little and dividing in the mouth, then extracting at the edge of the jaw.

IMPERFORATE HYMEN.

My attention was called to this case because, to use the words of the owner, "she forced out her bladder when she reared up." The subject was a valuable hackney filly, about two years old, in show condition and full of fire. Proceeding to examine her she soon showed me she would have none of it, and during her antics out came the bladder-like structure from her vagina and remained a few seconds. It ballooned out to the size of a large cocoanut. Suspecting what it was, and considering the difficulty in doing anything with her in the standing position, I cast her. During her struggles while cast the protrusion recurred again and remained so, enabling me to make a satisfactory examination. It contained no fluid, but appeared to be blown up by gas. I incised it freely vertically and it slipped back. Vaginal examination proved it to be an imperforate hymen.

I have had several cases where cord-like remains have existed in mares which would not breed. They have generally been attached to the vagina at each end of the cord. I have removed them and the mares have bred afterwards, so I think it possible these cord-like remains occasionally interfere with animals breeding.

EVERSION OF THE RECTUM. EXCISION OF THE PROTRUDING PORTION.

The subject was a yearling Shire colt. He was found in the field with the bowel protruding, and I was called in. On examination it was evident that the bowel had been prolapsed for some days for it was tumified, lacerated by rubbing against fencing, and stinking. It measured about eight inches. I could not handle him very well owing to restlessness, so cast him. Having emptied the rectum, washed with antiseptic solution, I smeared well with lard, and after some difficulty managed to replace the prolapsed portion. Packing the anus around with cloths, I tied his tail down by cord under the body to a collar, tying the collar to a surcingle to hold it in position, but I was not hopeful of success in retaining the rectum in position. Explaining my fears to the owner, I told him to send the animal in to me the next morning if it appeared again. He came in. I had decided on the removal of the stinking mass of protruded bowel.

After casting, anaesthetising, emptying rectum, washing with carbolic solution, I passed a tape suture through the skin and bowel in the upward direction, then one from side to side to hold the bowel from slipping into the rectum after removal of the protruding portion. An incision was carried round, and as it came to the tape sutures they were tied and the ends left on to pull at, while numerous interrupted sutures of strong silk were inserted through the mucous membrane, subcutaneous tissue, and skin of the anus. The colt was put into a box on peat moss, and given three soft bran mashies daily with gruel to drink. He was very weak from constant straining before the operation, so I did not give a purgative, hoping to keep faeces soft by laxative diet. I left the rectum alone until he showed signs of discomfort on the third day, when after lubricating my hand well, I removed a quantity of faeces, with some pain to the patient. Allowing the faeces to accumulate until he showed signs of wanting to empty his rectum, removing them soon became a daily job. Considerable swelling took place just inside the anus, and later some contraction about a hand's length inside. The sutures

gradually broke down. Faeces became so difficult to remove owing to constriction and pain, that I hit on employing the hose pipe with a strong flush of water. This acted splendidly, for guided by my hand I was enabled to break down faeces which had become very dry, probably owing to the inflammatory condition of the region. I was obliged to carry out this operation for about three weeks, when the colt gradually became able to evacuate the rectum without help. The parts became more normal, the constriction slowly disappeared. He left my stables about five weeks after entering, with instructions for keeping up and feeding on mashies until he could pass motions freely. The owner kept him so for about a fortnight, then turned him out to grass to take his chance. He came alright, and the owner kept him for some months, eventually selling him, because as he told me, he feared he might go wrong again, though I did not think he would.

I do not know why he should have everted the rectum. I had a similar case in an aged horse during the time this one was being treated. It was only a small protrusion, and was cured by the owner replacing directly it was observed. The cases occurred during the months of May and June, 1914.

On mentioning the cases to a brother practitioner, he told me that a friend had had two or three cases in his practice about the same time.

In conclusion, I beg to apologise for the raggedness of my notes—I will not call this a 'paper.' My methods and your methods may be different, and if free discussion of them leads to the development of the best, we shall all be the gainers.

The PRESIDENT: Gentlemen,—We have all been interested in Mr. Hudson's notes on his surgical cases, and I would ask you to pick out, those of you who have not made notes, the cases that have most impressed each one of you, particularly those with which you have had difficulties in your own particular practices. To take each case as Mr. Hudson has mentioned it would perhaps not be quite so interesting as for each one to take any particular case that occurs to him. I was particularly struck with Mr. Hudson's operation on Eversion of the rectum. I have had one or two cases to deal with, but I must say I have never been brave enough to attempt operation. I remember, as a younger man, having a go at a pig, but I do not think my operation was successful, and it was really such a dirty job that I do not mean ever to attempt an operation in that particular animal again. I once had an animal that had Eversion of the rectum. It was not a bad case in this respect—it yielded to treatment on being put back again two or three times, but it was, perhaps, not a case of the extent of Mr. Hudson's. I am sure there is great credit due to him for the amount of energy he displayed in that particular case.

His treatment of fracture of the jaws in dogs has been very interesting, because these are cases which we town veterinary surgeons get, and I have been successful in the treatment of some of them by the tying together of the incisor teeth with tape or with silver wire. It is remarkable how well they do providing that you have a dog in perfect health. The difficulty always has been in these cases to prevent the animals from feeding. They are animals that have a good appetite as a rule, and to keep them on sloppy food is one of the difficulties. I have generally adopted the plan of chopping their meat—when it can be given—into a form of mincemeat.

Cases of abscesses in the sub-maxilla—I take it that Mr. Hudson means in each case a pure bone disease. These cases are bothering to a veterinary surgeon because of the long continuation of them. I can call to mind several cases where the discharge has existed or gone on for a couple of years. There has been a small

enlargement of the bone—I do not mean one of those bad cases. You may try the insertion of a probe which wanders about inside for some distance, the enlargement of the opening, and the injection of different forms of dressing, but still you do that for such a continuous time that your client gets tired of dressing it. In those cases I think the application of a blister is perhaps the best treatment, and given time, I generally find that the animals do well.

I shall be glad to hear from any other member of the Association his experience as to any of these cases.

Mr. S. E. SAMPSON: I have listened with great interest to Mr. Hudson's paper, and cannot but admire his able surgery, especially with regard to the rectum case. We have all had a few cases of pigs with the rectum out, and I usually get a large pair of scissors, take off the mucous membranes and reduce the size, and put them back.

I had a horse about two years ago, late one night, where I found he had about a foot of the rectum out. The reason was that the owner knew "a bit too much," and had injected a strong salt solution, with the result that the horse had strained badly. I bathed the part and softened it, and got it back without much trouble. The irritation was very great, and I did not know what to do to allay it. I inserted an ordinary pessary, and although the trouble recurred the animal recovered, and the rectum went back easily.

The difficulty in treating fracture of the jaw in dogs is the keeping of the dog's paws off the tape. The fastening of the teeth by wire does undoubtedly produce some good results.

I had a case just recently of a cart horse with sub-maxilla abscess. His mother died when he was about three days old, and he was reared as an orphan and has always been weakly. He had some tooth trouble a short time ago. I rasped his teeth and could not find much wrong. I was asked to see him some time after and found he had some swelling. I suggested that he would have to have some teeth out. He was sent to me for operation. I got him cast. I took out a diseased tooth and a considerable amount of stinking pus came out. When the colt got up he seemed much easier. In washing his mouth out about the third day I saw something come out of his mouth and a thing flopped out on to the floor, which on examination I found to be the wall of an abscess cavity about the size of a Canary banana. The stench from it was very bad. I eventually discharged him, thinking that the swelling would go down. I am now informed by the owner that the colt is not doing well, that the swelling has not gone down, and that probably he wants some more teeth extracting. I thank Mr. Hudson for his remarks, and hope that we shall derive some benefit from his paper.

Mr. S. H. NIXON: I must thank Mr. Hudson for his very interesting reports of these surgical cases, I have not had much experience of them. We have had very little trouble except in cases of fracture of dogs' jaws where the animals have been pawing at the tapes.

With regard to laceration of tendon—not long ago I had a case of a mare and a horse trying to get into the stable together. They bumped and the mare was nearly knocked over. She stepped on a soft soap tin and the tendon was completely severed. I tried to pick up the tendon but was not successful. I put stitches in and dressed it. I continued the treatment until the stitches commenced to come out. There was not a great deal of synovial discharge. However, as soon as the stitches began to come out I left the bandages off and washed frequently with "Upad" solution. The mare made a splendid recovery, and went to work at the end of about eight weeks.

Mr. J. S. LLOYD: One of the advantages of being Hon. Secretary is that you get the opportunity of

persuading people to come and give papers, and if you cannot get them to read papers the best thing is to get them to give promises. Mr. Hudson has fulfilled his promise.

I did not hear the whole of Mr. Hudson's paper, but I take it that when he speaks of "Imperforate Hymen" he is referring to what is known as "White Heifer Disease." The first case I met was in a white heifer. I went to a cottage and found the heifer was down, doing some straining, occasionally moaning, and was supposed to be in calf. I put my hand into the vagina and could get no further. I emptied the rectum and found a great bag of fluid. I do not remember whether I was qualified at the time, but I know I did not feel inclined to take heroic measures, and the heifer had to be killed.

I was some time after called to a roan heifer a little over a yearling. It was in poor condition, and had always done badly. I came to the conclusion that it had "White Heifer Disease." I introduced a trocar and canula into the hymen and eventually got an opening. I got a stinking discharge, and I take it that the heifer must have had the hymen opened at some time, otherwise there would not have been the bad smell. By inserting the female catheter attached to an enema syringe and pumping I got some of the discharge away. I repeated the pumping every day for a few days. The heifer made a good recovery and did well, and was fattened. That is the only experience I have had of treating that kind of case, and I was rather surprised that it was successful.

I had a rather interesting case of fracture of the jaw in a big harness horse. The horse was taken into a paddock and was fastened to a big wooden sledge for him to draw around the paddock, but after it was nicely fastened he jumped the fence, about 4 feet high, with a drop of about 8 feet at the other side, with the result that he dropped in the lane at the other side right on to his teeth. The owner sent for me, and I came to the conclusion that the best thing to do was to take away the broken incisor teeth. I sent to a blacksmith near by for a pair of pincers and removed the tooth that was most broken. To my amazement the palatine bone came away, and of course, the palatine artery was lacerated. I tried different things to stop the bleeding, but came to the conclusion that I should have to cast him and try to pick up the artery. Whilst waiting for hobbles, I took him into a loose box and fastened his head high up, and to my amazement the bleeding stopped immediately. The next morning he was let loose. He fed and went on all right.

My experience with regard to eversion of the rectum in sows is similar to Mr. Sampson's. In one case that I remember, I was called to look at a calf with the rectum everted. I advised slaughter, but the owner did not wish this. The farmer's wife held the calf up whilst I put the everted rectum back again, but I had no faith in putting it back as it was badly tumified. The calf went on and did well.

I thank Mr. Hudson very much for his paper.

Mr. T. BOWETT: I should like to thank Mr. Hudson very much for his interesting paper. I might also tell you that it is only a sort of minor show of his capabilities in surgery, because I know of several cases which he could have brought forward which would have been very interesting. I have had three cases that I can remember of prolapsed rectum in colts which occurred about the same time as the cases referred to by Mr. Hudson. Not being such an able surgeon as Mr. Hudson, I did not attempt operation. I used medicinal remedies, and had success in all cases. In the first case, the prolapse was similar to that referred to by Mr. Lloyd in the case of the calf. In about ten days the whole of the thing sloughed off, and I went

one morning and the owner showed me the portion that had sloughed away. The colt never ailed any more. I fed the animals on treacle and bran mash, and milk.

In one case there was no sloughing at all. The prolapse seemed to diminish in size, and one morning when I went the thing had gone in, and I thought perhaps it had sloughed as the other had done. The next day it was out again, but it again went back. I then treated it with pessaries in the rectum with satisfactory results. I had a case of imperforate hymen in a bitch. This was a valuable pointer, and could not be served by the dog. There seemed to be a cord across. I removed the cord and left her alone. About a week afterwards I examined, and found that the roof and the floor of the vagina had grown together, and, of course, I had to force a passage. After that I kept the vagina plugged for some time. When she came in season she was put to the dog, and to the owner's astonishment she could not hold him.

I should like to ask if it is necessary in cases of fracture of the jaw to use any mouth wash.

REPLY.

Mr. President and gentlemen,—In carrying out this operation on everted rectum one would hesitate to do it if there were a possibility of getting it back by any other means. There is no doubt that in many cases it is possible. I had a case in which it came out as big as a teacup and it yielded to replacement by the owner whenever it was seen.

There is just a question of whether I was wise in operating, because it was a lot of trouble, but a case must be regarded as worth while whilst there is a chance of life, if the animal is of any value. Whether if the stinking mass had been retained I could have saved the animal I do not know.

Mr. Fletcher mentioned that blistering is useful in these cases of abscess of the Jaw. It is only recently that I have had cases issuing pus. I think that wherever there is pus I should be inclined to evacuate and syringe out. There is no doubt that blistering does a great deal of good in certain cases, but I am very doubtful of any benefit derived from it where there is pus in the interior.

In cases of fracture of the jaw there is certainly a tendency with dogs to try to get the tapes off. In those cases I have mentioned an injection of Morphia had been given, and it is often of benefit in preventing a dog from scratching, and by the time the effects have worn off he has got somewhat used to the muzzle on his nose. The muzzle I have adopted is similar to a ferret muzzle.

In Mr. Nixon's case, it is not clear as to the extent of the division of the tendon. Even if both tendons had been divided I see no reason—if the wound could be kept clean, why the case should not have been satisfactory. One or two veterinary surgeons round our way have been doubtful as to whether there is any difference in the test between tendon synovia and joint synovia. I do not know whether you are in the habit of applying the test of getting the discharge in the palm of the hand, and rubbing it with your finger. It occurs to me that it is not common to get frothing in the tendon synovia when this test is applied.

Regarding Mr. Lloyd's case of Imperforate Hymen in cases of cattle, I do not think it is common to get the discharge. Whether it can become septic without any opening it is difficult to say.

I thank you Mr. President and Gentlemen for the cordial way in which you have received my paper.

The PRESIDENT :—Gentlemen, I move that a hearty vote of thanks be accorded to Mr. Hudson for his interesting paper. His cases have certainly interested

all of us, and it is a sort of paper that we can enjoy at any time. According to Mr. Bowett, we can call upon Mr. Hudson again, because we know that he has not exhausted himself. The time which he has had to prepare his paper has been very short. We trust that he will take notes in the future of cases in which he has operated, and give us a similar paper later on.

Mr. M. ROBINSON :—I have much pleasure in seconding the vote of thanks to Mr. Hudson for his able and interesting paper, and am sorry that there are so few present to hear his remarks on the very interesting cases he has submitted.

The vote of thanks was carried with acclamation.

Mr. HUDSON :—Mr. President and Gentlemen, I thank you very much for your kind vote of thanks. It has been a great pleasure to me to prepare and read the paper.

The Members then adjourned for dinner. Upon re-assembling, the President said :—

"Gentlemen, Mr. Lloyd has made out a form of Resolution with regard to the financial position of the Royal College of Veterinary Surgeons." (The draft Resolutions were discussed at some length).

On the motion of Mr. J. S. Lloyd, seconded by the President, it was resolved :—

"That the Council of the Royal College of Veterinary Surgeons be recommended to circularise the profession soliciting an annual subscription from Members of £1 each towards the funds of the Royal College," and on the motion of Mr. S. H. Nixon, seconded by Mr. R. Hudson, it was also resolved :—

"That in the opinion of the North Midland Veterinary Association, it is advisable that the Executive of the National Veterinary Association consider the position of veterinary surgeons as affected by the "Derby Scheme," and the assistance still required by the Army Veterinary Corps from eligible members of the profession, and that concerted steps should be taken by the different associations to get practices which are left by eligible men carried on by ineligible members, without prejudice to the owners of the practices whilst they are away."

The PRESIDENT : I have great pleasure in submitting a resolution that will commend itself to you from a pleasurable point of view. As you all know one of the members of our Association, and a fellow townsman, has had the unique honour of being signalled out by His Majesty for distinguished conduct in France, and we cannot do less than offer our sincere congratulations to that member of our Association, Major Joseph Abson. The resolution that I shall submit for your approval is :

"That the members of the North Midland Veterinary Association offer their hearty congratulations to their member, Major Joseph Abson, F.R.C.V.S., upon his being mentioned in despatches, and upon his receipt of the D.S.O."

Mr. J. S. LLOYD : I have great pleasure in seconding the proposal made by the President. I feel sure that we all feel it a distinct honour to the members of the profession in Sheffield as well as to the members of this Association that our townsman, Major Abson, should be singled out for such distinction. We who know him well know that both from his organising and professional abilities he is well worthy of the honour bestowed, and as Secretary of the Association it will give me great pleasure to convey the congratulations of the Association to Major Abson.

The resolution was carried with acclamation.

The meeting closed with a vote of thanks to the President.

J. S. LLOYD, Hon. Sec.

The Law of evidence—Cruelty conviction quashed.

In the King's Bench Divisional Court, on Tuesday, Feb. 1st., before the Lord Chief Justice, Mr. Justice Sankey and Mr. Justice Low, the case of *Courtney v. Waters*, which had been specially stated by three of the magistrates of the Petty Sessional Division of Fareham, and which raised a question of the admissibility of certain evidence on a conviction for causing unnecessary suffering to a mare. It raised a most important point in magisterial procedure.

The counsel were, for the appellant (Mr. Ernest Courtney, of Wilton) Mr. J. B. Matthews, K.C., and Mr. Morle (instructed by Messrs. King Aylward, solicitors, Salisbury), and for the respondent (Inspector Waters of Portsmouth), Mr. Stuart Bevan (instructed by Mr. S. J. Polhill, solicitor, London).

The case had been stated by the magistrates on the application of appellant, Mr. Ernest Courtney, a tailor and draper, carrying on the business at Wilton, and who in September, 1914, took the tenancy of a farm of some 250 acres, called Newlands, Manor Farm, Stubbington, Hants. On October, 11th, 1915, the magistrates determined an information, preferred by the respondent, Charles Henry Waters, an inspector of the Society for the Prevention of Cruelty to Animals, against James Street, who was employed by Mr. Courtney as his farm bailiff, and who resided at the farmhouse at Stubbington, and was an experienced farmer of many years standing, and also against Mr. Courtney, that they had caused unnecessary suffering to a mare by omitting to provide such animal with necessary care and attention when in a diseased and suffering condition. The magistrates amended the information by substituting the word "unreasonably" before the word "omitting." Street pleaded guilty, and was fined £10 and £1 3s. 6d. costs, and the Bench convicted appellant and fined him £15 and £1 3s. 6d. costs. Mr. Courtney had not resided at the farm, but at Wilton, which was forty miles from Stubbington, and had visited the farm from time to time.

In cross-examination, Inspector Waters said he went to see Mr. Courtney at his business premises at Wilton. He was accompanied by two policemen—the Superintendent of Police at Salisbury and the Sergeant of Police at Wilton. Mr. Courtney, addressing the superintendent, said: "Are you here for the purpose of obtaining evidence against me?" The superintendent, replied: "Certainly not. If you think so I will withdraw," and thereupon he and the sergeant withdrew out of hearing.

Inspector Waters then said to Mr. Courtney: "We are not here for the purpose of obtaining evidence, but only for the purpose of obtaining an explanation about this horse, and it will be my duty to report the result of my enquiries."

Counsel, who appeared for appellant at the Petty Sessions, thereupon submitted that in the circumstances a subsequent statement made by Mr. Courtney was inadmissible as evidence, but the magistrates overruled the objection.

The questions for the Divisional Court were: (1) Whether the magistrates were right in admitting the evidence in question? If not, the conviction had to be quashed. (2) If they were right in admitting it, whether upon the statement of facts they properly convicted the appellant? If the answer was "Yes," the conviction must stand.

Mr. J. B. Matthews contended that the conviction should be quashed, on the ground that the evidence was improperly admitted, as the conversation in question was not free and voluntary on the part of appellant.

The Lord Chief Justice: There is no evidence, I understand, against the appellant except such as has been extracted from the conversation which is now the

subject under discussion, and if you once rule that out as inadmissible then there is no evidence against him.

Mr. Matthews: That is so, my lord. However relevant the facts against my client, and whether they would or would not have supported the conviction, is wholly insufficient.

Mr. Bevan, for the respondent, submitted that the magistrates were quite right in admitting the statements as evidence. It was not a case in which any prospect was held out to the appellant of his position being likely to prove better or worse according as to whether he made a statement or not. It was the Inspector's duty to go and make inquiries and report, and as he said: "We are not here for the purpose of obtaining evidence."

Mr. Justice Low: Does that amount to an assurance that what appellant said would not be used against him in this case?

Mr. Bevan: I submit it does not, but if it does, my submission is that upon the authority of decided cases that does not render the confession inadmissible.

The Lord Chief Justice, in delivering judgment, said the principle involved in the case has been stated by Mr. Justice Cave, who said: "By the law of England, to be admissible, a confession must be free and voluntary. If it proceeds from a desire to make reparation for a crime it is admissible. If it flows from hope or fear excited by a person in authority it is inadmissible."

There was no doubt about the principle in law. For a very long time it had been the settled law of England that a statement could not be used in evidence against a person accused of a criminal offence if he was induced to make it by hope of some advantage or fear of some disadvantage. The sole question in this case was whether or not the principle was applicable. This case ran very near the line, and the question of fact involved, which was really also a matter of law, was whether the statement in question held out hope or made any threat against the person who was being invited to make a statement.

He had come to the conclusion that, on the whole, this statement was one which must be held to fall within the principle of law already stated, that is to say, that it held out hope to the person interrogated. He thought that the true view of the case was that the appellant was induced to make the statement in answer to the questions that were put to him because he was told that any statement he might make would not be used in evidence against him, and that it was merely for the purpose of obtaining explanations, such as would necessarily or at least might lead appellant to the conclusion that if he gave a satisfactory explanation to the Inspector, that the prosecution would not proceed. Induced by that hope he gave the information, which was subsequently used in evidence against him, and upon which he was convicted. That statement was inadmissible in law, it could not be used against him in evidence, and as that was the only evidence against him the conviction must be quashed.

Mr. Justice Sankey and Mr. Justice Low expressed agreement, and the conviction was quashed.

Mr. Matthews: With costs, my lord?

The Lord Chief Justice: Yes.

—*The Salisbury Times and South Wilts Gazette.*

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donation for 1916 to the College funds:—

Mr. G. Garnett, Hove	£1 1 0
Mr. W. Shipley, Great Yarmouth	1 1 0
Amount previously acknowledged	12 12 0
	£14 14 0

Profit from a pedigree Large Black Cow.

On looking through my pig returns for each sow the other evening, amongst several good ones, one pedigree young Large Black sow particularly caught my eye, and I wondered if she had done specially well, or if other pedigree pig breeders had the same pleasant tales to unfold. Here is her record for 1915:—

She farrowed on 7th January, 1915, and had 8 pigs—4 boars and 3 sows. I sold five of her pigs for £52 4s., retaining three most perfect gilts to add to my herd. She farrowed again on 12th July, 1915, and had 12 pigs—4 boars and 8 sows. I sold 10 of them for £48 17s. 6d. and retained 2 gilts for my own herd. Thus the pigs from one of my Large Black sows during 1915 sold for £101 1s. 6d., and left me 5 most perfect gilts for my herd, worth, at least, £50 the lot. The average age of those sold was five months, and the average price, £6 14s. 9d.

I think one may say that few animals on the farm give such a good return for such a small capital expenditure, and such a quick turnover, and I find with my open-air system of breeding, medicines or drugs are never required.—Yours, etc., S. F. EDGE.

Gallops Homestead, Ditchling, Sussex.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Feb. 4.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieut. to be temp. Capt.:—J. A. Edwards (Jan. 26)
Temp. Lieut. R. H. McCullough relinquishes his commission on termination of engagement (Jan. 29).

Feb. 5.

Temp. Lieut. to be temp. Capt.:—F. Chambers (Jan. 1).

Feb. 8.

Major J. A. B. McGowan to be temp. Lt.-Col. whilst holding an appmnt. as Dep. Director of Vet. Services (Nov. 6.)

Cpts. to be temp. Majors whilst holding appmnts. as Asst. Directors of Vet. Services:—R. A. Gooderidge (Nov. 6); T. Bone, R. Tindle (Nov. 12).

To be temp. Cpts.:—A. E. Massy (Dec. 11); temp. Lieut. W. Andrew (Jan. 30).

Temp. Lieut. J. C. Thompson relinquishes his commn. (Jan. 15).

Temp. Lieut. F. V. Steward relinquishes his commn. on the termination of his contract (Jan. 29).

To be temp. Lieut.:—R. B. Cockburn (Jan. 27).

Feb. 9.

R. J. Stordy to be Lt.-Col. whilst holding an appmnt. as Dep. Dir. of Vet. Services (Jan. 11).

Temp. Lieuts. to be temp. Cpts.:—W. A. Morrin (Jan. 14); T. Gordon (Feb. 1).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Feb. 7.

To be temp. Capt.:—Capt. H. Edie (Feb. 8).

Feb. 9.

Capt. E. E. Seldon to be Asst. Dir. of Vet. Services, and granted temp. rank of Maj. whilst so empld. (Nov. 12).

Capt. E. W. Parks to be Asst. Dir. of Vet. Services, and granted temp. rank of Maj. whilst so empld. (Nov. 18).

Feb. 10.

To be Lieut.:—A. H. Stroud (Feb. 11).

The following casualty in the Expeditionary Force is reported:—

WOUNDED—Sergt. H. Scott, 182.

The following casualty in the Mediterranean Expeditionary Force is reported:—

WOUNDED—Pte. H. Warburton, 4777.

SOME EXAMINATION REPLIES.

Dear Sir,—The following are a few of the answers by qualified veterinarians, to questions set at a recent State Board examination, here given *verbatim et literatim*, which are worthy of a reprint.

"Hydrogen Peroxide is prepared by combining 2 parts of O and 2 of H."

"Hydrogen Peroxide is prepared by adding 2 atoms of O to water."

"Hydrogen Peroxide is an acid you made from H & which is an acid found in water and Peroxide is made from Hydrogene and Phosperum made Hydroge and Phosperum 1 part HO₂.

Also prepared by introducing Hydrogen Dioxide into water."

The difference in the analytical reactions in Mercurous and Mercuric Chloride?

"Mercurous is a great deal stronger than Mercuric Chloride."

"The difference analytical reaction between Mercurous Chloride blistering reaction one skin and intestines and Mercuric Chloride has Chlorene in it that Mercuric that gives it a poison effect to animal Kingdom. It is for blistering purposes."

Solitary Follicle?

"It is a small secentory glands leading to the intestines. Is a follicle that goes over the normal period of eruption. Does not throw off ovums."

Action of Ferrous Hydrate in Lead Poisoning?

"Renders it inert changing it into a different compound."

"Changes As to an AsI making insoluble soluling in the digestive tract."

Origin, course and distribution of the Spermatie Artery?

"Originates in the Arotoria artery and it flows to the through the Pulmto artery.

(a) Ext. Pudic.

(b) Post. Aorta. 2. Ext. Iliac. 3. Femoral Ext. Pudic, Spermatie."

Origin, course and distribution of the Radial Nerve?

"(a) Brachial plexus.

"(b) Is distributed to all the muscles in region of Radius and Carpus."

"They originate in the Thoracit cavity & trace on to the larger nerves and there they form with the Cranium nerves."

Comparison of the Stomachs of the Horse, Ox and Dog?

"The stomache of the horse is a small hollering aylindrical shape & it capacity is abought 18 gallons. The Ox has a larger stomache than the horse and it capacity is a bought 30 gallons, and the dog has a smaller stomache than any of the others its capacity is abought 5 quarts."

Our methods of examination are not so bad after all.

M.B.C.V.S.

The extract under the heading of Protection against Frostbite (p. 355, last week) was from a long article by Prof. S. Delépine. By an accident, his name was omitted from the heading.

Horse Warranty Case at Ashbourne.

At the County Court, before his Honour Judge Alan Macpherson, Thomas Roome, 116 Barker Street, Derby, carting contractor, claimed the sum of £30 from William Brunt, farmer, Upper Mayfield, for breach of warranty for a horse.

Mr. R. S. Clifford defended.

Mr. Bendle Moore, for the plaintiff, said it was a case entirely of fact, the circumstances of which would be seen from the evidence.

Mr. Roome stated that on November 2nd, he, in company with a Mr. Boden, of Derby, visited the defendant's farm at Mayfield, for the purpose of purchasing a horse which he had been informed was for sale, and which he thought would suit his requirements. Brunt showed them the horse, and trotted it on the road to test it for them. On being asked how he was selling it Brand said he warranted it sound, quiet and a good worker, except that it "grunted at the stick." They then took the horse to Mr. Joseph Harrison's, Ashbourne, where they attached it to a cart with the wheels locked to test it for its wind, and as it made no noise when it pulled witness was satisfied with it, and purchased the mare, paying Brunt £30 for it, the latter returning 5s. "for luck." Witness received the mare at his establishment at Derby next day about 12.30. It did about 2½ hours' work and was then sent to the blacksmith's to be shod. Whilst in the blacksmith's yard it fell down, but was got up again, and the man started to take it home. In the street it fell down again, however, and died a short time afterwards. Witness wired to defendant to ask him to come and look at the mare when they failed to get it up, and later, after it had died, he communicated with defendant and asked him to bring a veterinary surgeon to be present at the post-mortem examination which was going to be made. Defendant came alone and was present at the examination. Witness and defendant then tried to come to some agreement, but failed, witness offering to lose half the money if Brunt would do the same, but the latter would not agree to that.

William Boden, Abbey Street, Derby, furniture remover and cab proprietor, stated that he saw Brunt in Derby and ask him if he knew of a straightforward, honest horse, which would suit a working man. Brunt replied he had one himself which he would sell for £30. Witness subsequently visited Brunt's farm with Mr. Roome and saw the mare. After inspecting it and applying one or two tests witness said to Brunt, "Now before we go any further, how are you selling it?" Brunt replied, "I am selling her as quiet, sound, and a good worker, only she grunts at the stick."

Mr. Alexander Levy, F.R.C.V.S., of Derby, deposed to making a post-mortem examination of the mare on November 4th. He discovered the animal had succumbed to heart disease, which must have been of old standing. The weight of the heart was 18½ lbs., and the normal weight of a horse's heart was from 6 to 8 lbs. There was a large amount of fluid round the heart, a sample of which was taken back by Roome and Brunt.

Defendant, giving evidence on his own behalf, stated that he bought the mare at an auction sale at Ilam on October 25th, giving 19½ guineas for her. He had known the mare for some time previous, having frequently seen her at work on that farm. After he had purchased her he worked her five days, timber hauling, and at other work, which she did without showing any signs of distress, and he believed her to be sound, except that she "grunted at the stick," which, however, did not affect her wind. When Mr. Roome and Mr. Boden came to inspect the mare on November 2nd, he told them he sold her as "quiet, a good worker, but she grunted at the stick."

In reply to his Honour defendant said that he did not warrant the mare as "sound," but he may have used

that expression "she trotted sound." Horse buyers, he added, did not expect a "sound" warranty with a £30 horse.

His Honour: Did you yourself think the horse was sound?

Defendant: I thought she was sound except for "grunting at the stick."

His Honour: And if the plaintiff had asked you if it was sound you would have said "yes"?

Defendant: Well, a horse that grunts at the stick isn't sound, anybody knows that.

His Honour: My question is: If plaintiff had asked you if it was sound you would have said "Yes"?

Defendant: Yes, I suppose I should.

Mr. Bendle Moore: If you gave no warranty with that horse, as soon as you had sold it you had done with it, and had no further interest in it?

Defendant: No.

Mr. Moore: And it really didn't concern you what happened to that horse after you had sold it and drawn that money?

Defendant: No.

Mr. Moore: Then why did you go to Derby to see it after it had died?

Defendant: I went to see what was the matter with it.

His Honour, in summing up, said he had no reason to disbelieve the defendant when he said that during the few days he had the mare working he saw no signs of any serious trouble. He (his Honour) not only believed that defendant thought the mare was all right, but that he also told plaintiff so, and that he had said the mare was "quiet, sound, a good worker except that it grunted at the stick." Plaintiff had relied on the tests applied and also on defendant's statement, and judgment would therefore be for the plaintiff for the full amount claimed with costs.—*The Buxton Advertiser*.

A curious Hybrid.

Mr. D. J. Fourie, a farmer of Aberfeldy, Orange Free State, South Africa, had a surprise among his Merino ewes some weeks ago. One of the ewes had a lamb, part sheep and part springbok! It is going on well, it stated, although it is being brought up and fed by hand. The whole of the body of the animal is sheep: the head, neck, and legs are of the springbok type. The lamb has all the tricks of the springbok, even to the characteristic touch of moving off, doing so on the jump. It is believed that this is the first known instance of a springbok mating with a sheep.—*Harrismith News*.

In *The Scottish Farmer* of Jan. 6, Professor J. Cossar Ewart, writes:—

Sir—Tegetmeier used to write in the *Field* about supposititious hybrids. The half-merino half-springbok hybrid, said to have appeared at Aberfeldy, Orange Free State, South Africa, is more likely to be a counterfeit than a genuine hybrid. Now and again reports reach me about sheep-goat hybrids, and when in Mexico I heard of sheep-pig hybrids, but trustworthy evidence of any kind of sheep hybrids nowhere exists. There is no *a priori* reason why sheep should not prove fertile with antelopes, but before admitting that the Orange Free State merino ewe had a lamb by a springbok, we must have more evidence than is given in the last issue of *The Scottish Farmer*. All the so-called sheep hybrids I have seen were obvious reversions towards the gazelle-like muffs of Sardinia, or the urials of the Punjab. Recently a cross between a Blackface ram and a Soay ewe had twins by a Border Leicester ram. One was pure white, and in make not unlike a Blackface-Leicester cross; the other to start with, in make and markings, was like a young mutton. But though deer-like to start with, and in the habit of moving-off "on the jump," the dark-coloured lamb eventually acquired the coat and other characteristics of an ordinary sheep.

Perhaps you may be able later to submit convincing evidence that a "half-sheep and half-springbok" has actually been produced. In the head, neck, and limbs a young springbok, apart from its colour, is not very different from a young wild sheep of Sardinia (*Avis musimon*). In support of the view that Mr. Fourie's ewe proved fertile to a springbok, it may be mentioned that eggs sometimes develop without being fertilised in the ordinary way. For example, the ripe eggs of frogs sometimes produce tadpoles, if simply punctured by the point of a needle, and unfertilised sea-urchin eggs may develop if simply placed in sea water containing an extra amount of salt.

Veterinary Hospital suggested.

Mr. D. Cumming, Culter, Aberdeenshire, the president of the North of Scotland Veterinary Society, at a meeting of the Society in Aberdeen on Jan. 29th, said he was convinced that until they got the same conditions as the medical profession many valuable animals would be lost, not from want of proper treatment, but because the treatment was handicapped by the surroundings of the patient. What they had to strive for was a properly equipped veterinary hospital in a central position, where they could send their patients when their conditions were such that the attending surgeon could not do justice to himself or his patient.—*The Scottish Farmer*.

Commenting on the foregoing, *The Aberdeen Daily Journal* says:—

"Live stock is the sheet anchor of the farmer. It is therefore of the utmost importance that everything

should be done to strengthen and lengthen their lives when sickness or accident overtakes them. A properly equipped hospital, with plenty of accommodation and the best of skill would prove a great national asset. The financing and management of such an institution should not present insurmountable obstacles."

Representations have been made to the Board of Agriculture and Fisheries that a number of cases of disease amongst agricultural horses have been due to contact with military horses, or to the presence of such horses in the locality.

While the conditions prevailing in war render it almost impossible to prevent isolated cases occurring in which disease is so spread, it cannot be overlooked that even in normal times equine diseases are by no means infrequent in this country.

The Army Council have issued instructions that the utmost care is to be taken to obviate possible injury to agricultural and other horses by the presence of infected military horses, but absolute immunity from such injury cannot be effected unless agricultural and other horse owners themselves render assistance.

The President of the Board of Agriculture and Fisheries, therefore, desires to impress on agriculturists the great importance of taking all possible steps to prevent the spread of disease, and to co-operate with the military authorities as closely as possible to achieve this object.

Board of Agriculture and Fisheries,
4 Whitehall Place, London, S.W.
8th February, 1916.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended Feb. 5	13	13			2	2	91	209	12	83	236
Corresponding week in											
{ 1915 ...	27	29			2	2	†	†	13	68	280
{ 1914 ...	19	22			2	8	94	190	13	61	569
{ 1913 ...	13	13			6	7	90	170	11	38	358
Total for 6 weeks, 1916	76	78			8	26	581	1547	109	468	1480
Corresponding period in											
{ 1915 ...	115	129			5	7	†	†	92	475	2062
{ 1914 ...	117	127			11	34	522	1035	84	298	2551
{ 1913 ...	73	84			21	77	512	1180	68	213	2638

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.
Board of Agriculture and Fisheries, Feb. 8, 1916

† Counties affected, animals attacked:—
Kent 1, City of Edinburgh 1.

IRELAND.	Week ended Feb. 5	Outbreaks						15	3	15
		...	...	...	...	...	2			
Corresponding Week in										
{ 1915	2	23	...	16
{ 1914	1	9	...	...	4	30	5	34
{ 1913	8	25	4	28
Total for 6 weeks, 1916	...	1	5	...	...	...	11	100	21	52
Corresponding period in										
{ 1915	7	92	20	115
{ 1914	2	28	...	...	21	148	20	128
{ 1913	57	114	29	152

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Feb. 7, 1916
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1441.

FEBRUARY 13, 1916.

VOL. XXVIII.

AN ANNIVERSARY AND ITS SUGGESTIONS.

On the 18th of February, 1791, Vial de St. Bel was appointed the first professor at "the Veterinary College, London." Yesterday may, therefore, be called the 125th Anniversary of what is now the Royal Veterinary College, Camden Town. We all know its history and its great development since its early days; but it may be remarked that very much of that development is the work of the last of its five quarters of a century of existence. Many of us can remember what the school was at its centenary in 1891; those who do, best know how greatly it has since increased in efficiency.

Perhaps even veterinary surgeons do not always realise—and the general public certainly does not—how comparatively recent a growth veterinary science is. Most of the European veterinary schools are far younger than the London one; and the senior one—at Lyon, is scarcely thirty years older. For many years there were very few such institutions in Europe; and the first veterinary schools and their earliest graduates laboured under a further great disadvantage. They were not concerned with an activity that had arisen suddenly, such as telegraphy, or railway engineering; they were trying to develop into a science a craft which had been practised empirically from the earliest times, for the most part by uneducated men. The fact that veterinary work had chiefly been done by uneducated men was a great difficulty at first. It was hard to get men of education to train as veterinarians; it was harder still to obtain recognition for them when trained. It is not surprising that, in England, veterinary surgery was not legally recognised as a profession till more than fifty years after the foundation of the London school, that our members seldom were socially recognised as professional men till many years after that, or that veterinary science, as a whole, did not reach the standards of the medical profession till comparatively recently. The two professions stand equal now in most respects; but they have only become so well within the last fifty years. For a hundred years before that all that could be done was to make our later advances possible.

When we feel dissatisfied with our position compared with that of the medical and legal professions, we should do well to compare our brief history with their much longer ones. The truth is that it would be difficult to find a body of men who have made such progress, against such odds, in so comparatively short a time as the veterinary profession. So much has been accomplished in a few generations, and so large a proportion of it within the last generation, that we may be confident of our ability to make the few steps that remain for us.

NAVICULAR DISEASE IN A THREE-YEAR-OLD COLT.

By HENRY TAYLOR, F.R.C.V.S., Haywards Heath.

In October, 1913, a three-year-old colt, whilst being broken in to harness, one day fell lame somewhat suddenly. He was a pony about 13.2, and his sire was a hackney, and his dam a polo pony, both sound as far as is known. One naturally expected to find the lameness due to splints but, after very careful observation and digital examination, that was negatived, and the seat of the trouble located in the region of the coronet. For this he was blistered around the coronet and became *almost* sound in about two months. He was not worked again until the late summer of 1914, when he very soon became too lame for use, the same leg being implicated.

In October, 1914, he had commenced to point the affected foot, and as he was quite useless in this condition he was unnerved. He became quite sound and worked for nearly one year, *viz.*, until Sept., 1915, when the lameness recurred.

On examination this was found to be due to the growing together of the ends of the divided nerve of one side of the limb, the pony being quite sensitive to the prick of a pin on that side, and not at all on the other, though on the latter a small neuroma had developed. At this period the affected foot had become smaller than its fellow, narrow at the heels and more upright, moreover, it felt quite hot. He was again unnerved on that side, but as he did not get sound in the course of a few weeks and as sensation was appearing on the opposite side, he was operated on for that also.

He is reported now as having as good action as ever he had, and he goes practically sound again. The site of the neuroma is marked by a subcutaneous thickening, and apparently there are some adhesions.

One does not generally find navicular disease in a three-year-old animal, particularly when the parents are sound, but that the lameness was due to anything but navicular disease in the above case seems extremely doubtful. The case was interesting in one respect—that was for the beautiful way in which the operation wounds healed; on two occasions the legs were covered with dirt because he would not allow them to be clipped and dressed before being cast, so after being clipped and brushed when down for the operation, they were simply painted with tincture of iodine and the incisions then made.

ABSTRACTS FROM FOREIGN JOURNALS.

ELECTRICITY AS A CAUSE OF "SLEEPY STAGGERS."

Reinhard Oeller, of Straubing, has recorded the following unusual case.

The subject was a seven-year-old gelding, which had always been lively and shown good appetite. At the beginning of the winter months, this animal attracted attention by peculiarities in feeding, which he only displayed at the morning and evening meals, when the electric light was burning in the stable. Sometimes just at the beginning of the meal, sometimes during its course, he threw his head high in the air without visible cause, then trembled repeatedly, and held the food just taken for some time in his mouth without masticating it. He did not begin eating again till some time afterwards. Often this performance was repeated at very short intervals, and in that case the horse then remained for a minute or so standing with his head sunken, and his eyes fixedly directed into a dark corner.

The owner suspected disease of the teeth, but an examination of these gave negative results. The symptoms therefore appeared to be due to a bad habit or trick.

In the course of the next summer, when the feeding generally took place without artificial light, the greater part of the symptoms disappeared; but with the beginning of autumn they recommenced afresh, and still more violently. The horse now trembled when at liberty, very often showed shaking of the head while at work, and also showed other symptoms indicative of a commencement of "sleepy staggers." The peculiar behaviour whilst eating and the sudden standing back from the bars now became very marked.

One day while the attendant was feeding the horse, he accidentally touched one of the iron bars with his hand, and received a fairly severe electric shock from it. This led to investigation—and elucidation of the cause of the horse's condition. A long time before, the main current of the electric lighting apparatus which supplied all the lamps of the large establishment had been laid in the wall. A nail of the iron bar lay in very close proximity to the current, and this bar alone was conducting the electricity, for touching the other bars did not produce a shock.

The horse had touched the bars with his head, especially when eating eagerly, and had thus received electric shocks. On that account the symptoms were shown especially at that time of the year when the days were short and feeding had to be done by artificial light. At midday and in the summer, of course, the electric light was not used.

The author thinks himself justified in concluding that the very repeated irritation of the electric shocks had finally caused an alteration in the nervous system which manifested itself in the form of "sleepy staggers." He notes, however, one point in which the symptoms differed from those generally seen in "sleepy staggers." Instead of the slight sensitiveness to pain usually associated with that condition, there was in this case a pro-

nounced hyperæsthesia. The author says nothing of the subsequent history of the horse.—(*Berliner Tier. Woch.*)

TUBERCULOSIS IN GOATS.

In the year 1912, in the Institute for Animal Hygiene in the University of Freiburg, two cases of caprine tuberculosis were observed, and have since been reported in detail by Prof. Schlegel. One was a case of open pulmonary tuberculosis, and the other one of advanced generalised tuberculosis.

In the first case, the lobes of the right lung contained numerous pale yellow, caseo-calcified nodules from the size of a pin's head to that of a bean. The lobes of the left lung contained grey-yellow nodules of from hazel-nut to pigeon's egg size, which, when sectioned, revealed a white-yellow, cream-like, greasy disintegrated mass. The latter had undergone cavernous softening peripherally and was enclosed by a smooth grey-white capsule. In places this was ruptured, and the lesions had opened into the bronchi. The trachea and bronchi were filled with a muco-purulent secretion, in which tubercle bacilli could easily be demonstrated. The bronchial and mediastinal lymphatic glands were enlarged, and contained tuberculous centres.

In the second case, there was an advanced generalised tuberculosis in the lungs, liver, and kidneys of a cachectic seven-year-old goat. All the lobes of the lungs were beset with countless grey-white caseo-calcified tubercles of from pin's head to chest-nut size. Some of the bronchi had been broken into by caseous caverus. The liver showed many dozens of grey-yellow tubercles of from pin's head to pea size with fibrous capsules and caseo-calcified removable cores, the latter point differentiating the lesions from tubercles of other domestic animals. The cortex of one kidney showed one hazel-nut-sized tubercle and one lentil-sized, in the neighbourhood of which were many dozens of sub-miliary nodules. The lymphatic glands of the lungs and liver showed corresponding tuberculous lesions. Tubercle bacilli of the bovine type could be demonstrated in great numbers.—(*Berliner Tier. Woch.*)

THE EXISTENCE OF "TUBERCULIDES" IN CATTLE.

Perard and Ramon have reported some peculiar lesions which they have observed post-mortem on different occasions in three cattle (*Revue Vét.*). The lesions took the form of numerous rounded or oval nodules, isolated or confluent, of various sizes up to that of a nut. They were situated in the subcutaneous connective tissue and sometimes penetrated between the fibres of the superficial muscles. Their substance was homogeneous, their consistence was somewhat fibrous, and their colour was dull yellow or greenish-yellow.

Bacteriological and histological investigations showed these lesions to be tubercular in nature. They are comparable to the group of lesions known in human medicine as "tuberculides." It seems that in cattle, as in man, these cases indicate a tuberculosis of an attenuated virulence.—(*La Clinica Veterinaria*).

W. R. C.

AVIAN TUBERCULOSIS.

C. H. HIGGINS and A. B. WICKWARE, Biological Laboratory, Ottawa.

It was only within comparatively recent times, slightly over a decade, that tuberculosis as a disease has been observed among fowls in Canada. The affection had probably existed for many years, but its true nature and significance was not recognised until diseases of poultry commenced to attract the attention of workers in comparative pathology. Even up to the present time, the importance of the conservation of domestic fowls is scarcely realised, and apart from the purely technical considerations of the diseases which they may contract, very little thought has been exercised as to how the fostering of the industry will affect our domestic economy.

Theoretically, poultry offer one of the best investments for capital, but the losses are so great that the theoretical estimate may be discarded. Once tubercular disease makes its appearance in a flock, the aggregate losses are large although a great number of birds do not usually die at one time. The general unthriftiness of the fowls renders them unsuitable for table use, and the non-production of eggs makes the industry very unprofitable as well as discouraging to the poultry owner.

As avian or fowl tuberculosis, viewed from a causative standpoint, is almost identical with the disease as found in human beings and bovines, it is imperative that further research work be conducted in order to establish, if possible, its exact relation as a source of infection for other animals and man.

Mohler and Washburn, of the United States Bureau of Animal Industry, have reported the transmission of avian tuberculosis to mammals by the direct feeding of diseased organs, and also the infection of guinea-pigs by artificial inoculation with the whites of eggs from affected fowls.

That there is considerable variation in the morphology of the causative organisms found in the different forms of tuberculosis cannot be disputed, but extensive investigations have shown that even these apparently specific characteristics can be altered by artificial cultivation upon various laboratory media and also by growth in the tissues of different animals.

The fact that avian tuberculosis is transmissible to mammals, and the mammalian type communicable to human beings, serves to substantiate the theory that changes may occur in the human host whereby the avian and bovine types of organism may undergo transformation into the human type.

Recent statistics show that the bovine type of organism was present in 90 per cent. of cases of cervical adenitis (enlarged glands of the neck) occurring in children in the vicinity of Edinburgh, infection probably arising through the consumption of non-pasteurised milk. As these and many other cases of human tuberculosis have been traced to infection through the medium of raw milk it is only natural that one should question the possibility of transmission of this insidious disease through the medium of raw eggs. This assumption does not seem unreasonable in view of the fact that raw eggs form the principal article of diet for invalids and individuals whose natural resistance may be lowered and whose systems are impoverished from any one of a number of causes.

Himmelberger, of the Michigan Agricultural College, has recently succeeded in transmitting avian tuberculosis to a bovine, in which latter he obtained a reaction with avian tuberculin although unable to elicit a response when using the bovine tuberculin.

During investigations conducted at this laboratory throughout the past two years, our attention has been chiefly directed towards the microscopic detection of tubercle bacilli in eggs, the infection of experimental

animals with these eggs, and the perfecting of a method of diagnosis whereby latent and incipient cases could be identified.

The possibility of congenital tuberculosis being present in chicks has been given considerable attention but our experiments in this connection have thus far given only negative results. Eggs from tuberculous fowls have been artificially incubated and the chicks immediately transferred to new quarters where special precautions were taken to prevent infection from outside sources. The most careful autopsies, however, failed to reveal lesions of tuberculosis, while cultures from splenic tissues gave negative results.

The demonstration of acid-fast organisms in eggs was also undertaken and in nearly 20 per cent. of the latter, bacilli microscopically indistinguishable from tubercle were found to be present. The subsequent inoculation of guinea-pigs with material from these eggs produced a generalised tuberculous infection, from which typical avian cultures were procured.

The prevalence of avian tuberculosis throughout Canada is, every year, becoming more apparent. This is evidenced by the fact that inquiries from widely separated sources are, from time to time, received at the laboratory concerning this affection. In the fall of 1913, while on an official trip, one of us had the opportunity of visiting a locality where large numbers of poultry were being lost. On making inquiries, the information was that the farmers in the vicinity had been losing immense numbers of fowls, for which no cause could be assigned. Autopsies on several hens revealed the affection to be tuberculosis and, on one farm, a clinical observation showed several to be suffering from lameness which was apparently tubercular in nature.

SYMPTOMS.

The causative organism or germ of tuberculosis gains entrance to the system, usually with the food, and finding a favourable location grows and extends to the various tissues. This growth of the germ induces symptoms of unthriftiness, and this unthriftiness is followed sooner or later by death. The detection of tuberculosis from the symptoms is not always easy. Some may be observed to be "going light," yet they are seen to be good feeders. If picked up it is found that the flesh has almost entirely disappeared from the breast bone, and this should make one suspicious that something is wrong. A yellow or greenish diarrhoea is frequently present in affected birds and, where this is present the type of disease is most dangerous to the remainder of the flock, as the germs are to be found in the droppings in immense numbers.

One of the most frequent symptoms seen early in the course of the disease is lameness, a result of the infection involving a joint of the leg. Lameness is mentioned by persons forwarding fowls for diagnosis more frequently than any other symptom where our subsequent examinations have proven the trouble to be due to tuberculosis; so that we are at once suspicious of tuberculosis whenever the symptom is mentioned.

Fowl affected with tuberculosis may die in a few days from the first appearance of symptoms, or they may linger for weeks, gradually becoming more emaciated as the disease progresses, until they die from exhaustion. The progress is largely dependent on the strength of the invading germ and the natural resistance of the bird. Some outbreaks of the disease follow a more rapid course than others; usually, however, the course in an individual extends over weeks, and sometimes months may intervene before death takes place.

POST-MORTEM FINDINGS.

The post-mortem findings in fowl tuberculosis, when considered in relations to the symptoms and general history, are characteristic. The liver is usually the

principal organ affected, and there are lesions from the size of a pin point to that of a large pea, which are white or yellow in colour. The larger lesions when cut into give a gritty sensation as the knife passes through them. These lesions are distinct from the liver tissues and may be quite easily separated from the liver itself. In the more acute cases the liver may be greatly enlarged, even to twice its normal size. This enlargement in chronic cases is noticeable. The spleen is usually involved, the lesions having the same characters as mentioned for those in the liver. The enlargement of the spleen is usual, and it may be four times its normal size. The intestines may or may not be involved. When lesions are present we find nodules from the size of a small pea to that of a medium-sized nut. The minute dissection of these usually presents a free opening into the inside of the bowel, and at this point of entrance there is an ulceration. It is through this opening from the nodule on the intestine to the interior of the bowel that the bacilli gain access to and are so easily distributed by the droppings.

Other visceral organs are seldom involved. It is frequently observed that the joints, notably that of either or both hips may be the seat of tubercular ulcerations. Such an ulceration is the cause of lameness during life.

The affection has also been observed in canaries, lesions having been demonstrated in two birds autopsied by one of us at the Pathological Laboratory of Queens University, during the past winter. These birds were obtained as domestic pets from a dealer in Toronto, and shortly after being received showed clinical manifestations of a respiratory affection, death taking place in the course of a few weeks. Gross lesions were present in nearly every organ, and microscopic examination showed myriads of acid-fast bacilli of the avian type.

We have observed the disease in turkeys in a number of instances. In one instance, when a turkey was affected the history seemed to indicate the possibility of its having been transmitted from a bovine source. We were unable, however, to follow this up and absolutely determine this possibility.

PREVENTION AND TREATMENT.

In the prevention of tuberculosis and other infectious diseases of fowl sanitary surroundings, with plenty of sunlight and fresh air are requisites of prime importance. In our opinion, these features are best obtained by the use of the modern cotton-front house, a number of types having been described by various poultry authorities.

The best means of preventing and treating tuberculosis in fowls is to destroy the entire flock if all have been running together, and to thoroughly cleanse and disinfect the quarters which they have occupied with any good disinfectant, one of which is a 5 per cent. solution of crude carbolic acid. This may be made by adding two tea-cupfuls of crude carbolic acid to a pail of hot lime wash. This should be applied with a spray pump, brush, or old broom to all parts of the house occupied by the fowl. This method of disinfection is suggested, owing to the fact that in tuberculosis or consumption in fowls, as has already been indicated, the bacilli or germs are found in the droppings in great numbers, and these should be destroyed. This action is further recommended as it has been shown that fowls, dead of tuberculosis, if eaten by hogs communicate the disease to them, and it is probable that the droppings would also communicate the disease in a similar manner.

When destroying the birds after it has been demonstrated that tuberculosis is present, some may be suitable for food if an examination of the livers shows no yellow or white spots from the size of a pin point to that of a pea, and there are no nodules or lumps on the intestines. When these lesions are present the flesh cannot be considered suitable for human food.

We have found that eggs from tuberculous fowls may contain the bacilli or germs in the white, and we, as well as others, have demonstrated that they are in sufficient numbers to infect small experimental animals.

This suggests a possible source through which tuberculosis may be introduced into a flock, namely, by the unsuspecting purchase of eggs from someone who has tuberculosis among his fowl.—(From *Report of Vety. Director-Genl., Dept. of Agric. Canada*).

LINCOLNSHIRE AND DISTRICT VETERINARY MEDICAL SOCIETY.

[NATIONAL V.M.A.—SOUTHERN BRANCH.]

The annual meeting was held at the Angel Hotel, Grantham, on Thursday, February 10th, Mr. T. Holmes (Vice-President), in the chair. Others present were: Messrs. T. A. Rudkin, Grantham; R. W. Knowles, Wisbech; Edwd. Porter-Smith, Lincoln; and T. Hicks, Sleaford (Hon. Sec. and Treasurer).

The minutes of the previous meeting were passed.

Letters regretting absence were read from Capt. C. W. Townsend, F.R.C.V.S. (President), in France; Messrs. T. J. Keall, F. L. Gooch, G. Lockwood, Capts. H. Westgate and H. Hartley, in France.

From Capt. A. H. Routledge, Louth, resigning his membership owing to absence on military duty. [The resignation was accepted with regret].

Mr. EDWARD PORTER-SMITH, Lincoln, was elected to membership.

A letter was read from the Royal College, thanking the Society for the patriotism its members had shown during the war.

FINANCE.

The HON. TREASURER presented the accounts, which were duly passed, the balance in hand being £38 13s.

It was decided to send two guineas to the Benevolent Fund.

An application for support to the Belgium Veterinary Fund was adjourned to the next meeting.

ELECTION OF OFFICERS.

The officers were re-elected *en bloc* on the motion of Mr. Knowles, seconded by Mr. Porter-Smith.

The PRESIDENT, in his letter from France, expressed the hope that the members would keep the Association going as well as possible until after the war.

It was unanimously decided to send a letter of congratulation to Mr. R. W. Clarke, M.R.C.V.S., of Wragby, on his rescue from a wrecked transport. Mr. Hicks stated that Mr. Clarke was two hours in the Mediterranean clinging to a log.

OAT-HAIR BALL.

Mr. HENRY B. EVE, M.R.C.V.S., Folkestone, sent for inspection an extraordinary oat-hair excretion (dung ball) weighing 3 lb. 15 oz. from a mare, a heavy vanner belonging to the South Eastern Railway Co., and which was at work until he was called in—too late to be of service.

Thanks were accorded Mr. Eve, the Hon. Sec. remarking that they had been indebted to him for interesting specimens in the past.

STRANGLES, AND SOME OF ITS SEQUELÆ.

By T. HICKS, M.R.C.V.S., Sleaford.

FEBRA PYOGENICA. Caused by streptococcus distinct from other streptococci pathogenic to other animals and man.

Habit. Unlike the other pyogenic organisms, this is an obligatory parasite. The disease is always due to contagion and is never sporadic.

Morphological characters. In the form of long chains the streptococci may be seen by the method of Gram, although better by the Gram-Weigert.

Cultural characters. On surface of slanting agar it forms circular colourless colonies. Grows in bouillon as a flocculent deposit at the bottom of the liquid.

Method of Infection. Principally by inhalation; in some cases by ingestion, as it is fairly common to get mesenteric glands affected.

Lesions. Catarrhal inflammation of the air passages; animal probably refuses to take its food, in this case one may be quite certain this is either due to the soreness of throat, or submaxillary and pharyngeal glands becoming affected, when an acute adenitis of any or all of these glands takes place. This suppurative condition either breaks or requires surgical assistance, when a thick creamy pus exudes.

These typical lesions of strangles may be associated with abscesses in other parts of the body, such as the bronchial or mesenteric glands or the brain (through the cribriform plate), and last, but not least, a septicaemic infection may develop.

Period of Incubation. Very short—4 to 5 days.

The name Bastard strangles, or as better called the Irregular form of strangles, is a disease which is caused by the same organism but is manifested in a different manner. The abscesses are found in other parts of the body than the inter-maxillary space, and in many cases it is a sequel to the former. It occurs in an enzootic form and affects animals of all ages, and is, in my opinion, much more virulent.

Symptoms of Strangles (only observed in adolescent animals, because the older animals, from five years upwards, have acquired a certain degree of immunity. Some authorities maintain that the reason why the young horse gets it so readily is on account of the teething process). Staring coat, animal may cough, discharge at the nose and eyes; the following day glands may be inflamed, and according to the glands affected it will hold its head; brick-red mucous membrane of the eye and nose usually. Temperature, 103–106° F.: although the external temperature will be irregular. Pulse, to commence with, will be small and hard, but will quickly become full and bounding. In some cases it interferes with respiration, and in favourable circumstances the enlarged gland appears soft, and may break outside or be lanced by the veterinary surgeon, but it is not at all uncommon for the abscess to break internally and discharge either down the nose or down the oesophagus. I had a case under observation quite recently where a primary abscess developed in the lower third of the neck, adhering to the trachea and oesophagus, and the pharyngeal lymphatic glands did not appear to be affected at all.

Symptoms of Irregular Strangles. These may be manifested in many ways; by abscesses all over the body, particularly the head and neck, or internally. The mesenteric and bronchial lymphatic glands may become affected, or perhaps the brain, through the cribriform plate.

TREATMENT.

Prophylactic. The use of anti-streptococcus serum can undoubtedly ward off a severe attack, and in bringing young horses into contact with cases of this disease, it should be resorted to immediately the premonitory symptoms are observed.

I notice in various articles sent from the D.G.A.V.C., that he advocates the frequent use of the thermometer, but quite a year previously I had equipped some intelligent grooms in a depot of which I have veterinary charge with thermometers, and urged upon them the importance of their use.

In the ordinary treatment—mustard and water

applied to the glands of the throat and neck and breast, where possible, get the animal in a warm but airy place, and rug and bandage. Encourage the animal to feed and drink off the ground wherever possible, as it induces the abscesses to form lower down, i.e., in the intermaxillary space, whereas if a horse is tied with his head always well up, I have frequently noticed the parotid glands on either side affected, with large abscesses high up immediately beneath the base of the ear, and these take longer to cure than the lower abscesses, on account of being less able to get efficient drainage.

It is not always possible to remove into the ideal roomy box, but on the contrary, animals have to be left in the open. I would not have believed it possible to have favourable results from such procedure, but have had a fair experience with a great number of horses with strangles under such circumstances. Well rug and bandage if possible. When abscess breaks or has been lanced, thoroughly cleanse the cavity with a syringe and antiseptic; this, of course, is most important. Finally wash out with a solution of Iodine.

I use anti-streptococcus serum in obstinate cases at intervals of 3 to 5 days. Electuaries seem to be the best method of administering medicines, and they should contain any or all of the following:—Pot. chlor: Pot. nit: Quin. sulph: Boracic acid: Belladonna extr: Pulv. scillae: Pulv. glycyrrhiza: Glyco-heroin: Treacle or honey: Pulv. digitalis: Camphor.

I always give horse during the first three days when temperature is high—acetanilin 3ii morning and evening in drinking water, or in food.

In chronic cases I have had very good results from the daily administration of K I in 3ii doses in drinking water.

In a septicaemic case where the temperature kept up for four months after the attack, though the animal had a fair appetite but did not improve in condition, but soon got more emaciated. I gave streptocine and balls containing: Quin. sulph. 3ss; Ammon. carb. 3ii; Ferri carb. 3ii, night and morning. I could not keep the temperature down until I added the above dose of K I daily, and in ten days it had the desired permanent effect. I further consider it will prevent a case of Strangles developing into Purpura haemorrhagica.

When to use Pot. chlor. or boracic acid must depend on the case. If throat is very sore and deglutition difficult I generally use boracic acid only, and when possible steam the head, or failing that, poultice the throat.

PURPURA HAEMORRHAGICA (PETECHIAL FEVER).

I do not propose to enter very fully on this disease as it would occupy too much time.

The principal features are bloodstaining of the mucous membrane and swelling in dependent parts of the body. It occurs in isolated cases, and usually follows some debilitating fever, such as strangles, influenza, contagious pneumonia. It is a late sequel, and not often a complication. It is not a contagious disease. It is caused by micro-organisms or their products.

In all probability it is favoured by inefficient ventilation and bad drainage.

Blood staining of the nasal mucous membrane in the form of petechiae which gradually become confluent is a prominent feature.

Probably a little blood-tinged discharge may be seen coming from the nose. Swelling of the limbs, particularly the hind; loss of appetite and vigour; swelling of the head (abdomen in some cases) to enormous size which have a peculiar "tying in" feature. It is not painful, and eventually one will see an exudate oozing through the skin as the disease advances. Skin may slough off, although I have never experienced it.

Treatment. Get into roomy box and see to drainage. Some say leave the swellings alone, although I prefer to dab them with either white lotion or vinegar.

Intra-tracheal injections of KI in 3i doses two or three times a day. Dieckerhoff's solution is a very convenient form for those who favour intra-tracheal injections: I, 1 part; KI, 5 parts; H₂O, 100 parts.

Some use Pot. chlor. and Tinct. ferri perchlor. Well rub and bandage the abdomen with blankets.

In the case of the swelling of the head be ready to perform tracheotomy, although I have known Boracic acid given in an electuary work wonders in these cases. Give KI in 3ii doses night and morning in drinking water, with plenty of thick gruels during the worst stage of the disease. Steam the head frequently.

In my last two cases I used streptocine directly I discovered my patient had the disease, and I consider that it prevents a case from developing into the extremes we have known before we adopted its use.

Messrs. Holmes, Knowles, and Porter-Smith took part in the discussion on the points raised by the paper. A vote of thanks was accorded the Essayist.

This concluded the business of the meeting.

T. Hicks, Hon. Sec.

County Magistrate and the Swine Fever Order.

At the Faversham County Petty Sessions on Thursday, Feb. 3, before Lord Harris (in the chair), and other magistrates, Mr. Walter Wheeler Berry, J.P., of Gushmere, Selling, was summoned for failing to notify with all practicable speed the presence of swine fever on his farm at Selling on January 11th, and that being the owner of a boar used for service other than his own, he did not keep a register as required under the Swine Fever Order, on January 14th. Frank Clackett, his stockman, was also summoned for receiving at Dane Farm a sow without a licence, on January 13th. A plea of guilty was entered in each case.

P.C. Featherstone stated that on January 11th, owing to information received anonymously he visited Poppington Farm, Selling, where he saw two dead pigs and fourteen other pigs, which seemed ill. He also visited Gushmere Farm and found two other pigs dead there, and he reported the matter to the Board of Agriculture by telegram. He subsequently saw Mr. Berry and served the notice closing Gushmere and Poppingham Farms. When he told Mr. Berry that two pigs had died at Gushmere he said, "When they died I thought it was due to food causing irritation of the bowels, and I had 16 of the pigs shifted to Poppington as they would be cooler than on the hot manure." Witness told him he also found two dead ones at Poppington, and defendant said, "That is news to me." On the 12th Mr. Morgan examined the pigs and ordered him to serve notice closing Dane Farm, where he found 49 fat pigs, 11 sows and two boars. On visiting this farm on the 14th January he found a sow belonging to Mr. F. Neame, of Macknade, had been placed with the boar there, and that the sow was brought there the day following the service of the notice.

Mr. Berry stated it was reported to him on leaving home on the morning of the 12th that two pigs had died. He enquired the symptoms, and he was sure in his own mind that they were similar symptoms his pigs had before. He fed a large number of pigs and never had a case of swine fever. It had been impossible to get food suitable for young pigs, and he was certain that as they had had a preponderance of potatoes in their food it had caused diarrhoea. It was, of course, a distinct

error of judgment and he ought to have sent for his veterinary surgeon. As the Bench knew, he had been associated with the Board of Agriculture for many years, and it had always been his desire to obey every order. With regard to sending the sow to Dane Farm it was a pure accident as it arrived after the order was given. He did not keep a boar for service outside his own pigs, but in this instance he agreed to take the sow to oblige Mr. Neame, who was in a difficulty. As the sow had not gone away again he submitted that it was not necessary to have a register. It was a satisfaction to him to know how thoroughly the police and the veterinary surgeon had carried out the matter.

Clackett told the Bench that he never thought a word about the closing order until it was too late.

Superintendent Lawrence proved two previous convictions under the Diseases of Animals Order.

Mr. Berry said he had received £9 from the Board of Agriculture for the slaughtered pigs, which was half their value.

Lord Harris, addressing Mr. Berry, said it was distressing to him to have to address him from that Bench, and they did not hesitate to accept his statement that he had not acted wilfully in the matter. He took it that with his long experience of farming and keeping pigs Mr. Berry trusted to his own method of treatment was sufficient, but where a person of experience and self-confidence took it upon himself to take the risk of something happening that he did not expect he had to bear the penalty. They all ran the same risk as farmers. The Bench could not help regarding this as a serious case as two or three farms were concerned and there was a movement of animals. Though it was the first case of the kind they could not ignore the possibility that this disease, very tiresome and expensive to the county, might have been spread by the defendant's self-confidence that it was not swine fever. In the first case he would be fined £1 11s. 3d. per pig, making a total of £25 and special costs of 26s. The other two offences they considered were quite technical and there would be a fine of 5s. in each.—*The Faversham Mercury*.

Alleged Cruelty—dismissed.

At Tregaron Petty Sessions, on the 8th inst., before D. J. Williams, Esq., Chairman; Dr. J. Morgan, Ponrhydygroes; the Rev. T. R. Davies, Llanddewi-brefi; R. R. Rowland, Garth; Evan Evans, Tynewydd; and D. J. Davies, Ysbytty, Esqrs., Moses Williams, farmer, Llwyngoronwen, Ponrhydfendigaid, was charged by Walter T. Laird, inspector of R.S.P.C.A., Newtown, with having ill-treated a horse by travelling in an unfit state. Hugh Jones, farmer, Bwlchyddwyallt, was also charged with having caused the horse to be travelled. Mr. William Davies appeared for the defence.

P.S. David Jones gave evidence that on Saturday evening, January 8th, about half-past five, he saw Moses Williams leading a black mare on the highway, near Trecefel Farm. He noticed the mare walking lame and in pain. He stopped defendant, examined the mare, and found the near foreleg quite stiff with a large swelling on the knee and the lower part of the leg bent inward. The mare moved with a hop and was unable to put any pressure on the bad leg when it was on the ground. In fact, the mare moved on three legs. The condition of the mare was such, in his opinion at the time, that it would be gross cruelty to allow defendant to proceed any farther, and the mare was turned into a field adjoining Trecefel Farm. Defendant told him he bought the mare that day from Hugh Jones, Bwlchyddwyallt, and brought the mare from there that evening, a distance of four miles. Defendant offered to have the

mare killed there and then if witness promised not to say a word about it. According to statements made by defendant, the mare was sold for 10s., the value of its hide, and had not been worked for the past three years. Moses Williams had not carried out his promise to kill the mare.

Inspector Laird gave evidence that on Friday, Jan. 14th, accompanied by P.S. Jones, he saw the animal on Trecefel land. It was a black mare, very old, and in low condition, very lame on the near foreleg. The leg was bow-shaped, the knee was enlarged to the size of a small football, and locked with bone instead of ligament. The back tendons were contracted and, though the animal had been turned out for a week, there was still inflammation in the knee joints and tendons. The off foreleg was normal. The animal was worn out, and only fit to be slaughtered. It had not been shod for some time.

Robert Henderson, M.R.C.V.S., giving evidence for the defence, said he examined the mare that morning. The lameness of the near foreleg was due entirely to chronic enlargement of the knee and, of course, the enlargement caused stiffness. The mare was absolutely free from pain and there was no inflammation, the lameness being old standing, and there was no wound. The mare was unable to work, but could walk on the road.—Cross-examined: He thought the animal was in the same condition a month ago. He was surprised to hear there was inflammation. There was nothing wrong with the tendons. He was told that the mare was in foal, and was therefore worth more than its hide.

The Bench intimated that they did not wish to hear further evidence and dismissed both charges.—*The Cambrian News and Farmers' Gazette.*

An Unclean Milk Case at Bradford.

At Bradford on 10th inst., Lister Woodhead, farmer, of 50, Smith Road, was fined 20s. for failing to exercise due diligence to prevent contamination. It was alleged that, although an inspector had pointed out to the defendant that the udders of two of his cows were defective, defendant had sold milk from those cows, and the samples showed the presence of pus, an inflammatory discharge which was liable to create serious illness in persons, especially young persons taking the milk.

Defendant said he had never sold any of the milk from the defective cows, and maintained that the swelling on the udders had been caused by a bruise, and not by a cold. The lump had been three times as large as it was when the inspector saw it, but he (the defendant) had got it down by constant attention. He had been at his present address for eight years, and had never had a complaint made against him before.—*The Yorkshire Post.*

Seaweed for Horses.

The passage in Plutarch which refers to the use of seaweed as food for horses will be familiar to some of my readers. Caesar's army at Thapsus, after defeating Scipio and Juba, was short of food for the animals, and mixed seaweed with grass to supply the deficiency. Germany, it seems, is carrying out experiments with the object of doing the same thing. Farmers have from time to time made use of seaweed for cattle, and it is well known that it is in some parts of the country served up for human consumption. According to a German journal, if seaweed is rapidly dried it loses all taint of salt, and it may be ground like corn, although not so small, for it has to be moistened with water and allowed to swell. "Chemical analysis shows that seaweed in

this condition possesses a greater proportion of protein and fatty substances than plants of a similar nature, though less mineral elements. A mixture of seaweed, rye, and potatoes in the proper proportions would make an excellent fodder for cattle, and perhaps also for sheep-dogs.—*Horse and Hound.*

The Royal Sanitary Institute,

90 BUCKINGHAM PALACE ROAD, LONDON, S.W.

A discussion will take place on Thursday, March 9th, at 4.15 p.m., on "Food Inspection, Standards of Purity for Food Supply in War-time, and the Utilisation of Condemned Stores." To be opened by J. WRIGHT MASON, M.B., D.P.H. (Medical Officer of Health, Hull). The Chair will be taken at 4.15 p.m. by Sir WILLIAM J. COLLINS, K.C.V.O., D.L., J.P., M.D., M.S. (Vice-President). The following speakers have consented to take part in the Discussion:—R. King Brown, M.D., D.P.H., M.O.H., Bermondsey; W. J. Howarth, M.D., D.P.H., M.O.H., City of London; H. R. Kenwood, M.B., D.P.H., M.O.H., Beds. C.C. and Stoke Newington; W. Perrin Norris, M.D., D.P.H., Chief Medical Officer, Australian Commonwealth Medical Bureau; Samuel Rideal, D.Sc., F.I.C., J.P.

Nomination to Council R.C.V.S.

P. Wilson, M.R.C.V.S., Lanark; nominated by Dr. O. Charnock Bradley; F. W. Garnett.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds:—

Mr. W. Turtill, Wickham Market	£1	1	0
Mr. P. C. Woolston, Bedford	1	1	0
Mr. H. Bibbey, Winsford	1	1	0
Mr. A. Over, Rugby	1	1	0
F.R.C.V.S.	1	1	0
Mr. R. W. Knowles, Wisbech	1	1	0
Amount previously acknowledged	14	14	0
	£21	0	0

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Feb. 11.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieuts. to be temp. Capts.:—G. W. Dunkin (Feb. 1); W. H. Power (Feb. 2).

Temp. Lieuts. relinquish their commns. on termination of their engagements:—F. J. Delaine, A. Seim (Feb. 5).

Feb. 14.

To be temp. Lieut.:—W. S. Inglis (Feb. 1).

To be temp. Qrmr., with hon. rank of Lieut.:—A. H. Webber (Feb. 15).

Feb. 15.

Temp. Lieuts. to be temp. Capts.:—J. H. T. Kenyon (Jan. 4); W. P. Stokes (Feb. 4).

To be temp. Lieut.:—T. O'Connor (Feb. 1).

The A.V.C. Comforts Fund.

Collected by Mrs. Mettam, Royal Veterinary College, Dublin, in aid of Mrs. Moore's Comforts Fund:—

per Jas. V. Daly, M.R.C.V.S., Dublin:

J. Balmer, Ballymena	£2 0 0
H. Boal, " "	1 0 0
—McAldin, Banbridge	1 0 0

M. Quinn, Dublin	2nd don.	4 0 0
R. H. Lambert, " "	"	10 0
A friend	"	10 0
F. Talbot, Tuxford	"	1 1 0
O. D. Neary, Ardee	"	1 0 0

per E. C. Winter (F.), Remount Depot, Newport News, Va., U.S.A.:

E. C. Winter (F)	£4 4 0
A. Gillespie, D.V.M.	2 2 0
F. X. Maguire, D.V.M.	2 2 0
J. King, v.s., Carlyle, Saskatchewan	2 2 0
	10 10 0
	£18 1 0

Previously acknowledged £354 14 0

Miss Jessie Evans, Kingston-on-Thames, per N. Almond

(F.): 2 helmets, 2 prs. mits. 1 body belt (2nd don).

Mrs. H. Begg, Hamilton, Lanark: 1 pr. socks, 1 muffler (2nd don.)

J. Ewing Johnston, Belfast (3rd con.): 2 mufflers, 1 body belt, 3 pr. cuffs, 1 pr. mits., 7 pr. socks, 3 wither pads. 1 knitted waistcoat, 1 muffler, 3 pr. mits., 3 pr. socks (4th con.).

Mrs. McChee, Hamilton, Lanark (per H. Begg (F.): 1 muffler, 1 pr. socks

Mrs. T. M. Inglis, Forfar: 6 pr. socks, 1 muffler, 1 helmet, 2 pr. cuffs, 12 pkts. cigarettes

The Lady Mayoress and ladies of the Belfast Branch of Queen Mary's Needlework Guild, per J. Ewing Johnston: 30 pr. socks, 12 mufflers, 9 pr. mits., 4 helmets

Mrs. J. George, Magherafelt (2nd con.): 1 muffler, 2 helmets, 1 pr. socks

Mrs. K. J. S. Dowland, Hawick, N.B.: 3 pr. mits, 6 pr. cuffs, 1 pr. socks

Personal.

LEESE—KING. On the 10th Feb., 1916, at St. Jude's, Southsea, by the Right Rev. Bishop Ingham, Arnold Spencer Leese, Captain A.V.C., second son of the late Spencer Leese, of Southport, and of Mrs. Spencer Leese, of North Finchley, N., to May Winifred, youngest daughter of W. H. King, P.W.D., India, retired, and of Mrs. W. H. King, of Southsea.

BROWN.—On the 4th January, at 31 Eagle Road, Wembley, to the wife of Esmond Brown, M.R.C.V.S., twin sons.

MASSON.—On the 14th inst., at Bannercross Abbey Road, Torquay, to the wife of Charles Masson, a daughter.

The Board of Agriculture have made an Order defining the pier at Whale Island, Portsmouth Harbour, as a foreign animals quarantine station for the specific purpose of the landing of the animal described in a schedule annexed—namely, "one pig at present on board H.M.S. Carmania."

OBITUARY

JOSEPH WOODS, M.R.C.V.S., Kirkham, Lancs.

1880; Graduated, Edin.: April, 1880.

Mr. Woods died on February 10th, aged 59 years.

WALTER SMITHERS, M.R.C.V.S., Dorking, Surrey.

Lond.: January, 1883.

Death occurred on February 14, after a short illness, in his 57th year.

CORRESPONDENCE.**VOLUNTARY SUBSCRIPTIONS TO THE R.C.V.S.**

Your remarks on the above in last Saturday's *Record*, are timely and to the point.

It is no use harping on the old half-guinea string, but I feel sure if the Council had asked for that sum in their Bill, they would have got it long ago, and could have saved £1000 a year all these years.

The proposal now is to economise at the expense of efficiency. At the present time the country is over-run with quacks—and quackery is spread broadcast. (The contents of a bottle of medicine supplied by one of these men, and sold at 2s. were, on recent analysis, found to be worth one-twentieth of a penny). If the Council carry out their economic proposal, the result will be that they will let loose a number of semi-qualified quacks.

Another retrograde proposal of the first importance is to have one examiner for each section of the four classes with the professors of the various schools over them. A man of merit and mettle, I imagine, would not act as examiner under these conditions.

I do not see that it is necessary for the Council to issue an appeal for funds. The Treasurer has done so, and, like a man, has shown an example by subscribing, which not one of his colleagues has done, and so long as they refuse to subscribe, many members will follow their example, including—Yours, etc., X. Y. Z.

INSURANCE COMPANY'S FEES.

Dear Sir,—The enclosed letters may be of interest to you. You will find my reply on the one dated Feb. 2nd.

Yours truly,

88 High Street, JAS. BLAKEWAY, Senr.
Stourbridge, 3rd Feb.

ACCIDENT BRANCH,

NORWICH UNION FIRE INSURANCE SOCIETY, LIMITED.

Birmingham, 26th January, 1916.

Messrs. J. Blakeway & Sons,
Veterinary Surgeons, Stourbridge.

Dear Sirs,

W. H. Aston, Lye Saw Mills, Lye, Stourbridge.

I have received a proposal for the Insurance of three horses and a mare, the property of the above, and should be very much obliged if you would kindly examine the animals on our behalf, and let me have your report upon the attached form at your early convenience.

On receipt of same, I shall be pleased to remit you the amount of your fee.—Yours faithfully,

H. R. HOWELL, Manager.

Birmingham, 2nd February, 1916.

Dear Sirs,

I shall be glad to learn whether you have yet examined the animals, viz., three horses and a mare, belonging to the above, as requested in mine of the 26th ult. If so, I shall be glad to have your report on their condition.

Yours faithfully,

H. R. HOWELL, Manager.

[Copy of letter.]

Dear Sir,—In reply to your two letters *re* horses of Mr. Aston, Lys—I think it a gross piece of impertinence on your part to offer such fees to a Vet. Surgeon, and any M.R.C.V.S. who undertakes work for such fees must be very hard up for a job.

The information required by the Society is:—

Sex or species. Name. Colour, distinctive marks, and Stud Book number (if any). Age (rising). Height: hands, ins. Market value, £. Any special remark.

For what purpose are the horses used? Are the stables in good sanitary condition? Are the Horses in your opinion sound, healthy, and free from vice? Are they well kept and in good condition? Are any of them unfit to insure? If so, indicate them and give your reasons. Which of the Mares are in foal, and do you think they will foal safely? If any of the above Mares have never foaled before please name them. Are any of the animals subject to gripes or any other disease? If so, give particulars. Do you recommend the Society to accept the proposal?

I have examined each of the animals described in the above Schedule, and certify that the particulars and values given are correct.

Signed

M.R.C.V.S.

Please state distance of Assured's Stables from Surgery.

Scale of Fees. For the Inspection of One Horse, 4/- Two Horses, 3/- each. Three to Ten Horses, 2/6 (Max. £1 1s. 0d.) Ten to Twenty Horses, 2/- (Max. £1 11s. 6d.) Over Twenty Horses, 1/6 (Max. £2 2s. 0d.)

A mileage of 6d. per mile one way is allowed after the third mile.

The Treatment of Mules.

Mr. Cecil Chapman sends to the *Times* an extract from an Army Officer who has been dealing with the mules bought for use at the Front. It indicates that the much-abused animals can be successfully managed if well treated. The writer says: "You asked me to tell you about our mules. We have fifty of them, and they have been with us since March last. We did not look forward to them at all. The truth is, not one of us knew anything about them, and I came across no one at the time who did. Our men, many of them unaccustomed to animals of any kind, were frightened of them. They arrived at night, and led us a real dance. They had just come from America, and were thoroughly upset by their voyage and many handlings. Many, of course, were entirely unaccustomed to harness or to being ridden, and all were in very poor condition. Many were unshod, others were shod on forefeet only, and all were covered with lice. One man was savaged, and several were kicked on the first day, but I made up my mind to try nothing but kindness in dealing with them. I have never allowed a twitch to be used, or a mule to be hardly treated by beating, nor have I allowed them to be put in stocks when being shod. Kindness has paid in a wonderful way. Our mules let us do what we like with them. There are still one or two timid ones, but we have no difficulty in harnessing, shoeing, or handling, and they are the most willing and sensible of beasts, except when they are up against a load which they cannot move, and in that case they jib. I have always fed them on maize in preference to oats, because it is the food they were brought up upon in Argentina, and I have had no disease of any kind. Indeed, I was congratulated the other day in having the best conditioned mules in the division, not a poor one amongst them, in spite of the hard work which a field company under present conditions finds for them to do."

Perth Horse Case.—Auction Sale.

In the case of *Hamilton v. Dunbar*, an appeal was taken to the Sheriff-Principal of Perth, who has reversed the decision of the Sheriff-Substitute. Sheriff Johnston's interlocutor is as follows:—

Perth, 27th December, 1915.—The Sheriff sustains the appeal, recalls the Sheriff-Substitute's interlocutor of 23rd October, 1915; finds in fact—(1) That on 12th February, 1915, there was knocked down to the pursuers at Macdonald, Fraser's Auction Mart, Perth, a brown horse the property of the defenders, and that the pursuers paid to the auctioneers £56 as the price of the horse; (2) that the defenders warranted the horse as being fit for all farm work, and that under the conditions of sale pursuers had three days for trial and rejection as disconform to warranty; (3) finds in law that such a warranty given under such conditions imports that the horse, by health, training, and temperament is fit for all ordinary farm work, and is at the time of sale in a condition to be tried at such work; (4) finds further in fact that on the day following the sale the pursuers proceeded to try the horse in drawing a cart, when it proved unfit for work owing to some affection of the feet and spine, and could not therefore be properly tried; (5) that on Monday, 15th February, pursuers intimated rejection of the horse; (6) that the horse was subsequently exposed by Macdonald, Fraser by mutual arrangement, and was sold for £26, which sum, less the expense of re-exposure, is in the hands of the auctioneers; (7) finds further in law that the defenders are bound to pay to the pursuers the price of the horse and other expenses sued for, less the sum in the hands of the auctioneers, which falls to be paid by them to the pursuers. Therefore decerns against the defenders jointly and severally in terms of the conclusions of the action; finds the pursuers entitled to expenses, allows an account thereof to be given in, and remits the same when lodged to the auditor of Court for taxation and report. (Sgd.) C. N. JOHNSTON.

Note.—In this case I reach a different conclusion from that of the learned Sheriff-Substitute, but on grounds not apparently brought clearly before his mind. It was strenuously argued on behalf of the pursuers, on the strength of the alleged import of a number of English cases, that the catalogue at a sale by auction is to be treated as a written embodiment of the terms of contract, and that it cannot be contradicted by parole as to what took place at the sale. I do not think this is the law of Scotland. In my view a sale by auction is in the ordinary case a verbal contract. No doubt, however, the catalogue is of importance—it is the primary statement by the seller of the offer, and if he chooses to modify the terms he must be careful to make it clear to every offerer that he has done so. He fails, however, in this if, where the article under a certain number in the catalogue has been withdrawn, he conspicuously displays this number upon another and different article for sale. This happened in the present case, and accordingly, if the pursuers had refused to have anything to do with the horse on discovering that it was not "72" as described in the catalogue, they would have been within their rights. It is a more difficult question whether pursuers waived any challenge of the discrepancy. Much importance cannot be attached to the payment of the price by the pursuers. It was in accordance with understanding that in a question with the auctioneers they must pay. But the pursuers also took away the horse resolved just to keep it if it suited. On the other hand, no doubt they made a protest which they did not withdraw, in the view, however, which I take of the matter, I do not require to decide this question. Defenders state that they gave a warranty, and by that warranty

they are bound. That warranty was "fit for all farm work." My view of what such a warranty imported in the circumstances is brought out by the findings in the interlocutor. The sale took place on a Friday. On the Saturday the pursuers tried the horse in the drawing of a cart with a load of 16 cwt. Although the pursuers are not farmers, the drawing of such a load in a cart along a road is part of ordinary farm work. The horse appeared to the pursuers to be unable to draw the load without great distress. They sent for a veterinary surgeon to whose skill and experience no exception can be taken, and the vet. pronounced the horse unfit for work. Upon the Monday, that is within three days, pursuers intimated rejection of the horse. The opinion of the Peebles vet. was confirmed a fortnight later by a Perth veterinary surgeon to whom no exception can be taken. It is true that there is evidence that at earlier and later dates the horse worked satisfactorily. That does not, however, alter my opinion that it is proved that on the three days subsequent to the sale the horse was not fit for work or to be properly tried. If that evidence is to be relied upon, then the horse when it worked satisfactorily was in a different state from that in which Mr. Kerr and Mr. Reynard found it. When they examined it there was more amiss than a certain flatness or narrowness of the hoof, which is all that the witnesses in favour of the horse will allow. It may very well be that about the time of sale the horse's maladies or infirmities, whatever they are, were in an acute cycle from which it rapidly recovered after its return from Peebles. The evidence as to its conduct in the stall goes to support this theory. But whatever the explanation, it was not, in my opinion, at the date of sale conform to warranty which defender admits he gave.—(Intd.) C. N. J.—*The Scottish Farmer*.

How foot-and-mouth was spread in U.S.A.

Following the outbreak which recently caused such losses in this country, the disease was found in twenty-one States inside of three months. One quarter of the outbreaks were traced to inquisitive persons who persisted in visiting neighbours' herds, and so carried the disease. Most of these persons were farmers, not one was a veterinary inspector. In Cincinnati, O., a court injunction had to be taken out against one stock buyer, as it was found that he was carrying the disease from farm to farm, and so his visits had to be stopped. In Illinois farmers made the killing and burying days of foot-and-mouth affected cattle regular holidays. They drove up and tied their horses as close as possible to the graves. One man who wished to be perfectly informed as to the symptoms of the disease, examined the mouths of his neighbour's diseased cattle. Then he went home and examined the mouths of his own cattle to see if they had the disease! They had it all right—three or four days afterwards.—A. S. Alexander in *American Farm Journal*.

The existence of foot-and-mouth disease amongst animals on the premises of the County Asylum, Wells, Somerset, was confirmed on Friday last, 11th inst.

The usual precautions were taken to prevent the spread of the disease, and an Order was made prohibiting the movement of animals in a large area surrounding the infected farm.

Board of Agriculture and Fisheries,
11th February.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended Feb. 12	16	17	1	17	2	6	74	159	8	73	214
Corresponding week in											
1915 ...	9	11				1	†	†	4	87	354
1914 ...	20	23			4	4	93	161	13	62	748
1913 ...	15	16			5	7	87	159	11	25	218
Total for 7 weeks, 1916	92	95	1	17	10	32	655	1706	117	541	1694
Corresponding period in											
1915 ...	124	140			5	8	†	†	96	562	2416
1914 ...	137	150			15	38	615	1196	97	360	3299
1913 ...	98	100			26	84	599	1339	79	238	2856

† The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked:—Kent 1, Suffolk 1, Fife 3, City of Edinburgh 1.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.
	(a)		(a)		(b)		(b)		(b)	(a)	
IRELAND.											
Week ended Feb. 12	...	...	...	...	...	...	3	19	4	18	
Corresponding Week in											
1915 ...	...	...	...	...	...	...	1	16	6	68	
1914 ...	...	...	...	...	...	...	2	32	7	60	
1913 ...	...	...	...	...	...	...	4	21	6	5	
Total for 7 weeks, 1916	1	5	...	...	...	...	14	119	25	72	
Corresponding period in											
1915 ...	...	...	...	...	...	...	8	108	26	183	
1914 ...	...	...	2	23	...	...	23	180	27	188	
1913 ...	...	...	...	...	...	...	61	135	34	157	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Feb. 14, 1916.
Note.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1442.

FEBRUARY 26, 1916.

VOL. XXVIII.

CANINE PRACTICE.

There is no doubt that canine practice has suffered a good deal owing to the war, and will continue to do so. It is worth our while to consider the effect of the war upon this branch of our work with some precision, both as regards the duration of the war, and the period of economic stress that must follow it.

Speaking roughly, we may not unfairly divide dog-owning clients into two classes. One is the dog fancying fraternity—those who, sometimes for pleasure alone and sometimes with an eye to profit also, keep valuable pedigree dogs. These are the clients who are generally most valued by veterinary surgeons who specialise in canine practice, and they are also those whom the war will most diminish. The income we draw from them is already much less than it used to be, and its decrease will continue. Dog-fancying will be at a discount for some years at the very least; and veterinary surgeons must make up their minds to a great—perhaps an enormous—decrease in the fees it used to yield them. This will affect some practitioners very severely; but there are many others to whom it will make little difference.

The second class is a much larger one numerically; and, though individually its members are generally less profitable clients than dog fanciers, the income we draw from them collectively is greater. Many people who keep dogs as household pets—usually only one at a time and that one often of little monetary value—now seek our services for them. Some may not do so now so often as of old; but there are solid grounds for prophesying that a great deal of our practice amongst them will continue. There is a growing public recognition of the moral obligation upon people who keep animals to care for them properly, a growing perception of the superiority of qualified to unqualified services, and a knowledge that veterinary surgeons are now willing as well as able to treat dogs—which has not always been the case. All these reasons will retain us much of our connection with clients of this class. For some years they will be less profitable to us than they once were, but probably not very much less; and they will regain their old value in time.

All things considered, the outlook for canine practice is far from discouraging. One part of it will diminish greatly and perhaps permanently; the other will decline much less, and then recover. Though it may never again be quite so remunerative as it has been to specialist, it will remain one of the important departments of general practice.

SEAWEED FOR HORSES.

I was much interested in the note from *Horse and Hound* on this subject published in last week's issue of *The Veterinary Record*.

When in the Isle of Man three years ago, I noticed a bay van gelding belonging to a bathing machine proprietor eating seaweed with apparent relish. The seaweed was partly dry and had been left on a pebbly beach by the receding tide. I asked the owner how long the horse had evinced a liking for seaweed, and he told me it had eaten it regularly in fairly large quantities during the bathing season for five years. The condition of the animal was good, and the seaweed was eaten without the admixture of any other food and without being chopped up.

It seemed surprising to me that the bromine and iodine in the seaweed had apparently done the horse no harm whatever.

G. MAYALL, M.R.C.V.S.

SUCCESSFUL TREATMENT OF PLEURISY BY INJECTIONS OF AIR.

Bouchet has recorded this case (*Bullet. de la Soc. Cent. de Méd. Vét.*) The subject was a horse, in which pleurisy was diagnosed with certainty from dulness of the inferior third of the thorax on both sides.

Thoracentesis was practised on the right side, 200 grammes of fluid were withdrawn, and then, by means of Potain's apparatus, 200 c.c. of air was blown into the pleural cavity. Another 200 grammes of fluid was then withdrawn and another 200 c.c. of air blown in, and this procedure was continued until the whole quantity of fluid, amounting to five litres, had been withdrawn. A desiccative application, consisting of Croton oil in ether, was then rubbed into both sides of the chest. In the evening the temperature was little altered, registering 100.7° F.; and the pulsations were 45, and the respirations 25 per minute.

The next day, and the day after that, the line of dulness had risen again, but without attaining its former level.

Three days after the first thoracentesis, a second one was practised upon the left side; and three litres of fluid were drawn away and replaced by three litres of air. In the evening the temperature was 101.1° F., the pulse 42, and the respirations 22. The next day the general condition was better, the breathing had become easy, and the dulness scarcely reached half its original level.

Four days after the second thoracentesis a third was made, in which 850 grammes of fluid were taken

away, and one litre of air was injected. In the evening the temperature was 101.1° F., the pulse 40, and the respirations 18. In the succeeding days the condition visibly improved, and the appetite was good. The author then, for eight days, gave some digitalis in order to strengthen the heart.—(*Berliner Tier. Woch.*)

THE BACTERIOLOGICAL INVESTIGATION OF THE LUNGS IN SUSPECTED ANTHRAX.

Eugen Stemmer, of Berlichingen, recommends that, when pieces of tissue are being sent to a bacteriologist to be tested for anthrax, pieces of lung should be sent in addition to pieces of spleen. In packing the pieces of lung for transport, he advises the avoidance of air-tight flasks, and the use of paper, hay, or other substance permeable to air as a packing material. Fresh pieces of lung (up to four days old) may be used for the *microscopical* demonstration of Anthrax bacilli, though the spleen is more suitable for this purpose. In the case of older material, pieces of lung and of spleen are used together for the preparation of agar plate cultures. In this case heating of the material for 25 to 30 minutes at 60° C. to 65° C. is requisite, so as to destroy any sporeless putrefactive germs present. The agar plate culture is preferable to the streak culture. The nature of the original infection—that is, whether it was by feeding or inoculation—has no influence upon the cultural results.—(*Berliner Tier Woch.*)

THE CASTRATION OF THE RABBIT.

S. Lászió has published an article upon this subject (*Allatorvosi Lapok*). The operation is desirable when it is necessary to keep a number of male rabbits together in one cage, as otherwise they quarrel and damage each other's skins by biting. The castrated rabbit is more peaceable than the uncastrated one, develops more quickly, and has a better coat. The operation is best performed at the age of from five to six months.

The following is the author's procedure. He points out that the scrotum and the testicles (which are elliptical in shape) are situated under the anus, and that the cremaster muscle is very powerful, enabling the animal to often draw the testicles high up during the operation. After securing the animal, the testicles must be seized very quickly and held fast, or else they are drawn up towards the abdominal cavity, and are only recovered again after a long time. The scrotal skin is cleansed with alcohol, and the testicles are exposed by two longitudinal incisions, after which the two spermatic cords are placed together in the emasculator and cut through. The stumps of the spermatic cords should be pushed back into the scrotum with the object of obtaining quick healing. After the operation the animals should be placed in clean cages. After-treatment of the wounds is unnecessary.—(*Berliner Tier. Woch.*)

DESCENT OF OMENTUM AFTER CASTRATION.

F. Müller, of Lilienthal, has recorded a case of a colt, fifteen months old, in which the omentum became prolapsed, not immediately after castration,

but five days subsequent to the operation. The mishap was probably caused by the colt being chased in the meadow by a strange dog.

About a foot of omentum was hanging out from the castration wound. Müller cut away the hanging part close up to the castration wound, disinfected the castration wound, and then, working with his hand in the rectum, drew the remaining omentum as far as possible back into the abdominal cavity. The colt remained lively and free from fever, and the case proceeded to an uneventful recovery.—(*Berliner Tier Woch.*)

W. R. C.

CENTRAL VETERINARY SOCIETY [NATIONAL V.M.A. SOUTHERN BRANCH.]

The ordinary monthly meeting was held at 10 Red Lion Square, London, W.C., on Thursday, February 3rd, Mr. W. R. DAVIS, President, in the Chair.

The following Fellows signed the attendance book:—Messrs. Nicholson Almond, W. Roger Clarke, Jas. Fulton, G. S. Hearley, R. C. Irving, W. S. King, J. W. McIntosh, W. Norman, E. Lionel Stroud, Thompson, Prof. G. H. Wooldridge, and Mr. Hugh A. McCormack, Hon. Sec. Visitor: Lieut. P. Connolly, A.V.C.

On the motion of Mr. Almond, seconded by Mr. E. Lionel Stroud, the minutes of the previous meeting were taken as read and confirmed.

A letter regretting inability to be present was received from Major F. J. Taylor.

SPECIMENS.

Prof. WOOLDRIDGE exhibited the uterus of a hermaphrodite pig. It was discovered by Mr. Jones, of Towyn, when spaying some six-months-old pigs. The specimen showed at one end a tiny ovary and at the other a well-developed testicle. Hermaphroditism in the pig appeared to be not uncommon, but a case was always of sufficient interest to bring forward. He had no history of what the external genitals were like, but they must have been obviously those of a gilt, or the animal would not have been spayed.

Mr. ALMOND suggested that sections should be made to see the structure, as external appearance might be misleading.

Prof. WOOLDRIDGE said he did not think that was likely. Sections would spoil the specimen for museum purposes.

The PRESIDENT thought there was little doubt that it was a testicle.

Prof. WOOLDRIDGE said there was clear epididymus upon it.

Mr. G. S. HEATLEY exhibited the foot of a horse that was bought for army purposes. The animal was between 16 and 17 years old and had four greasy legs, and was subject to repeated attacks of spasmodic colic. He informed the War Office that he thought it very desirable that the horse should be put down, as he was evidently not fit for any work. He was in great agony, and for a considerable time was lying down. He died suddenly, a *post mortem* examination revealed that he was in a very depleted condition. The foot was found in his box and he was standing on the stump of the leg. There was blood oozing all round the coronal band. The os pedis had been fractured. The War Office took no notice of the request to have the animal destroyed. He himself had no doubt that neurectomy had taken place before the horse was sold. The animal did not appear in any pain until the foot sloughed off. There was no swelling and the animal appeared all right in the coronet until the foot was found.

The PRESIDENT thought there was very little doubt that it was a case of neurectomy. He believed the horse had been suffering from laminitis before he was bought. It showed how animals that had had an attack of laminitis were unsuitable for neurectomy. It seemed extraordinary that anyone responsible for buying horses for the Government should purchase such an animal.

Mr. R. C. IRVING said perhaps it had not been noticed. A horse could be very greasy sometimes.

Mr. HEATLEY said the horse had been standing for about a month and was never able to do anything. He could not say whether it had been brought in from another depot or was a new purchase.

Prof. WOOLDRIDGE said that would make a big difference, because if it happened to be one that was bought in the first rush there might be some reason for the purchase. One could hardly conceive of such an animal being purchased in recent times, when more opportunity was given for examination.

Mr. IRVING said a great many horses were bought in the beginning of the war without being examined at all by a veterinary surgeon.

Mr. HEATLEY said the horse had evidently been treated for sidebone or corns.

Mr. N. ALMOND mentioned a case of an accident to a cart-horse which was run into by a motor car with the result that the frontal bone was fractured. There was distinct motion of the skin inward and outward as the horse breathed. Whether there were detached pieces of bone he could not tell, but on moderate pressure on the skin surface the bone could not be felt in the centre within the radius of the size of a two-shilling piece or half-a-crown. It was a question whether resection should be made or not, but he took the conservative view and left the case to nature. There was merely an abrasion of the skin, which was not broken, and that was dusted with an antiseptic powder. The horse was kept quiet for about a week, and ate and drank, and showed no symptoms, and was then allowed to go to work. The accident occurred about the 10th December last, and the horse had been working ever since all right, the pulsations had entirely ceased, and there was no evidence of any trouble with the sinuses of the head. The question he wished answered was as to the probabilities of the case in the future. He thought that if there were any trouble coming it would be probably through the falling down of the fractures in the frontal sinus and possibly nasal trouble. The owner would like to get some allowance for depreciation in value, and it was rather a ticklish point as to what depreciation, if any, had taken place, and whether it would be safer to settle the matter at the present time. The horse was worth about £60 at the time of the accident and was not insured. It made no noise in its breathing.

Mr. IRVING said he had had a similar case in a van horse. The animal got perfectly well for the time being, but about five months afterwards commenced to make a noise in his breathing and became so bad that he had to be destroyed. After his accident he went back to work in about three months. There was no trouble between the time of the accident and the time of putting him to work, and he might have been put to work a little bit earlier.

Prof. WOOLDRIDGE asked whether there was any hæmorrhage from the nostril. [Mr. ALMOND: No.]

Prof. WOOLDRIDGE said that made a considerable difference. It seemed to imply that there was no internal wound and therefore very little prospect of infection, and if there was no infection the chances of complete recovery were greater. In some cases it was not possible to say how long the pieces of bone, if they were aseptic, would take to work their way out. In Mr. IRVING's case the injury appeared to be distinctly lower down, mainly involving the nasal bones rather than the frontal. There could be a thickening of the frontal

bones without interfering with the breathing. The complication of some spicules of bone eventually detaching themselves and discharging themselves internally was a risk, but since there was no hæmorrhage the probabilities of that were not quite so great as they would otherwise be.

Mr. ALMOND said the abrasions were painted with Tincture of iodine as soon after the injury as possible. There were no signs of brain symptoms or any symptoms whatever. When the animal went to work he had a special arrangement made so that the band of the bridle did not press on the part.

The PRESIDENT remembered a similar case a good many years ago in a mine pony. It was run into by a truck, and the frontal bone was fractured, without any very great damage to the skin. The animal recovered perfectly, and there was no trouble during the two years he knew him. There might be a fracture without producing spiculae at all, and the bone would unite with connective tissue filling up the interstices.

Mr. MCINTOSH said, in a horse of such value he thought the owner was entitled to a certain amount of depreciation. There was no doubt there was a possibility of some future development as a result of the injuries, and he would have no hesitation in making a small claim.

Mr. ALMOND said another point was whether there should be a settlement now or whether one should wait for six months.

Mr. MCINTOSH said he should make the understanding clear now. If left six months the chances were much more remote.

REPORT ON PECULIAR DEATHS IN CATTLE.

J. D. FULTON, M.R.C.V.S.

Mr. President and Gentlemen,—Some time ago our Secretary asked me if I would oblige with a paper at one of our monthly meetings. Although quite willing to accede to his request—as a young member of the Association and also of the Royal College—I felt some diffidence in reading a paper before older and more experienced men than myself.

At our last meeting we had various discussions, more or less impromptu, on different cases, and it was my wish to bring forward the report I am about to read; but as time was limited, Mr. MacCormack suggested that I should postpone it until this meeting.

On Monday, 29th November, I was asked to make a post-mortem on a red and white bullock about two years old, which was found dead in a field where it had been grazing with some others.

I went to the field, examined the carcass, but found no discharges.

Before opening the animal, cut off the ear, and made a microscopic examination of the blood, to see if there was any sign of anthrax. After preparing three or four slides and examining them, there seemed to be no trace of bacilli. Returning to the field later in the day I proceeded to make a post-mortem.

I had the abdominal contents taken out, and first examined the contents of the rumen, but it did not seem to contain anything beyond grass and a large quantity of oak leaves. I opened the other stomachs and found them to be perfectly healthy. The intestine along all its course was healthy; it showed no sign even of congestion and was quite a normal colour. The spleen was also normal. The liver showed signs of fatty infiltration. The kidneys had a fair amount of fat round them and were quite healthy.

The contents of the thorax were likewise healthy. I was quite at a loss to know what was the cause of death.

Case 2. This occurred some six days later. The animal was found ill in a field—two fields away from the

one in which the first bullock died. When I arrived there the animal was down. I tried to get him up. He made the attempt but had not the power to do so. He was grunting and groaning, and evidently in pain. Previous to my arrival he had been given a red cattle drench.

I thought the best thing to do was to give him some medicine to act on the bowels quickly, thinking that there might be some poisoning, but before it had time to act the animal died.

A post-mortem was made and, as in the previous case, the rumen contained grass and oak leaves, and the other post-mortem signs were similar also.

I made enquiries as to whether they had any yew or other poisonous plants about the place, but was told there were none.

After this I wrote a letter to the owner explaining the cases, and suggested that, should any other deaths occur, an expert's opinion be obtained. To this he agreed.

Case 3. Exactly a week later I was called to the same farm to see a white nine months old bullock, which had that morning been found by the cowman with his head up against a wall and grunting. He immediately reported it to the bailiff, who sent for me.

By the time I got there—within a quarter of an hour—the animal was dead.

The strange thing about this case was, that it had never been out of the large loose box from the time it was weaned, and was in no way connected with the two previous cases.

The carcase of the beast was opened and revealed exactly the same as the others. A consultant was sent for and came the next day, and he can bear out my statement that the internal organs were healthy, with the exception of the liver, which was slightly fatty.

In cutting into the superficial muscles of the fore and hind quarters, they seemed the normal hue; but on cutting into the deeper muscles—especially the deep pectoral—they were found to be deeper in colour.

Being excised the smell did not seem altogether healthy.

Part of this muscle was taken away by the consultant, and a letter from him, two days later, said that the bacillus of black-quarter was found by microscopic examination. He advised that all young cattle up to two years, should be inoculated with double vaccine.

This was done; but only two days later another calf of the same age was found in the same condition as Case 2.

This young bull was with other 12 or 13 in a large stockyard where it had been turned out after it was weaned, and had never been in contact with Case 3.

The post-mortem findings were the same as in the others.

Note. The first two cases were being simply grass fed. The third and fourth were receiving hay, chaff, and a few toppings.

Case 3. This beast had been castrated some twelve days previous. On post-mortem the operation wound was perfectly healthy and was healing kindly.

Replying to Mr. Almond, Mr. Fulton said the serous membranes of the abdominal and thoracic cavities were examined and found absolutely healthy. The temperature of the second animal was quite normal, or perhaps a little below normal.

Mr. ALMOND said he had in mind some very mysterious cases which he had to examine twenty-five years ago. They were young animals which, in a very very hot season with very little herbage, had been feeding upon a mixture of bracken and other food. The bracken was used for littering the animals, but as food became extremely scarce a certain amount of bracken

was mixed with the ordinary food, and the animals fed for some time without any harm, but as the quantity of bracken was increased disease broke out amongst them.

The deaths were preceded by symptoms which he was afraid he had forgotten. The cases were published in the *Journal of Comparative Pathology and Therapeutics* at the time. The symptom which struck him was the extremely high temperature before death, 108 and 109, lasting for some time, and the post mortem symptom which attracted most attention was the large petechiae under the serous membranes.

With regard to the third animal that died, he understood it was castrated about a fortnight before death. He supposed the possibility of the cases having been quarter ill would probably have occurred to the Fellows although the usual symptoms were not present, but one of the symptoms in the third case, the extravasation or darkening of the muscles in certain parts of the body, seemed to point to quarter ill or black quarter. Another symptom usually found in the later cases of quarter ill was the subnormal temperature. Although in the early stages there was an elevated temperature, the temperature was usually normal or subnormal some time before death. He would like to know whether the animals were inoculated and if so with what result.

Mr. FULTON said there had been no further deaths since the inoculations were carried out at the beginning of December.

Prof. WOOLDRIDGE said he happened to be the one who examined the third beast, and he could corroborate exactly what Mr. Fulton had said with regard to the complete absence of any abnormality in the viscera. The animal was dead, unfortunately, when Mr. Fulton arrived, and no temperature could be taken. On reflecting the skin, both the hind quarters and the fore quarters showed practically nothing, but on cutting deeper into the tissues and reflecting the shoulder there was a very dark appearance of the muscles, particularly the pectoral muscles, and on cutting into the intercostals they were found to be still darker. The pleura was perhaps slightly more pink than normally, but there was no indication whatever of any pleurisy. He examined a piece of the intercostal muscle with a view to discovering any organisms that might be present, and the black-leg bacillus was easily demonstrated. Moreover, the muscle had the absolutely characteristic smell, resembling rancid butter. Black-leg was one of the few conditions which a blind man could definitely diagnose by the sense of smell. He reported to Mr. Fulton that in his opinion the death of that beast was due to black-leg and that it was an atypical case. That might be different, of course, from the other animals. It was a younger animal than the two first, and a little younger than the fourth, which was not ill at the time he was there. Whether the others died from black-leg or not he would not give an opinion. In the fourth case it was noteworthy that Mr. Fulton, having reason to suspect that condition, made an examination of the muscle tissue and found no darkening of the muscle. It was even possible that the third case might not have been due to the same cause as the others. With regard to the condition of the operation wound, that was apparently running a normal course. There was just a little discharge from the scrotum, but otherwise it appeared to be what would be expected in ten or twelve days when healing had not gone on rapidly. He enquired on the spot the history of the previous cases and as to previous existence of any outbreak of disease or obscure deaths and found nothing to help him in that way. He had no hesitation whatever in expressing the opinion as to the cause of death in the third instance, although the others seemed to be a mystery.

Mr. MCINTOSH said, from the description given by Mr. Fulton he had very considerable doubt as to whether any of the cases was black-leg. He had had an oppor-

tunity of seeing a considerable amount of black-leg when in country practice, and had invariably been able to discover evidence of a fairly definite nature.

In some cases deaths were extremely rapid, but apart from this he could not recall in all his experience an outbreak bearing any similarity. As a rule an observant stockowner would notice some sign or symptom of a more or less characteristic nature, such as isolation, stiff movement or actual lameness, and if he came to closer quarters he would probably be able to detect the emphysematous character of the local lesions which, he thought, were invariably present. In any case, he thought it very unlikely to have five consecutive cases without something of a more definite nature being observed. He had not noticed any marked abdominal symptoms further than those of discomfort and general uneasiness which he thought peculiar to most ailments.

In the cases described there seemed to be a considerable amount of abdominal pain, and it appeared to him from that alone that something of a poisonous nature was affecting the animal through the digestive organs. It was possible to get this effect without any marked post-mortem lesions being produced in the viscera. With regard to the third case, Prof. Wooldridge's remarks had proved conclusively the presence of the bacillus of black-quarter, but were it not for those remarks he would be inclined to think that the third case suffered from malignant oedema following castration. Was there not a possibility of mistaking the bacillus of malignant oedema for that of black-quarter?

Prof. WOOLDRIDGE thought they were very easily distinguished.

The PRESIDENT asked whether malignant oedema affected cattle.

Mr. MCINTOSH said it did. The deaths were certainly very mysterious, as in none of the cases did he think there were typical symptoms of black-quarter either before or after death.

Prof. WOOLDRIDGE quite admitted that.

Mr. MCINTOSH said the discovery of the bacillus of black-quarter was, of course, positive proof of its existence in one particular animal, and it certainly looked as if the same cause had been operative in all the cases. In quarter-ill abdominal symptoms were not very common, and the flesh, in animals that were killed in the early stages, apart from the local lesion might be quite normal in character. Even an expert could not tell that the animal had suffered from black-leg if the portion affected had been removed.

The PRESIDENT did not think the diagnosis of black-leg was as simple in a great number of cases as Mr. McIntosh seemed to think. It was said not to occur in animals under about six months old, but he had seen black-leg affecting sucking calves, and had also seen a case in a heifer in calf nearly three years old. Now and then he had met cases something like those Mr. Fulton had described, which he had put down to black-leg after a *post mortem*, on a farm where black-leg was common.

Prof. WOOLDRIDGE understood that the first part of Mr. McIntosh's statement referred to the opinion he would have held before he (Prof. Wooldridge) had made his statement, and not the view he held subsequently. The organisms whose existence was proved, were found in the intercostal muscles, and not near the seat of the operation. With regard to the simple course taken by black leg, anyone who had had any experience of country practice realised that the disease did not always run a typical course. With a typical case there was absolutely no trouble whatever in diagnosis. One reason he had for particularly examining the muscles in those areas was because in an outbreak he had to investigate early last year, where a number of calves were dying off quickly, in some of the cases the quarter muscles of the hind limbs and the fore limbs were not

affected, but the pectorals and the deep shoulder muscles were affected, and that made him alive to the likelihood of it occurring in subsequent cases. In that instance he was able to trace the outbreak to the death of a sheep that had occurred on the place. The sheep had been skinned, and parts of the carcass had been thrown about for dogs, quite irrespective of the fact that the muscles of the limbs were discoloured. He had seen the disease in the abdominal muscles of a three weeks old lamb, due to umbilical infection. In connection with the outbreak he had mentioned, some of the calves were actually found dead without having shown any symptom whatever, so that the fact that symptoms might be observed for a day or two was not a thing that could be relied upon.

Lieut. CONNOLLY said Prof. Wooldridge's remarks went a long way in clearing up any difficulties in connection with the cases. The third case was peculiar in that the animal was reared in the place where it was seen. He had had a very wide experience of black-quarter in cattle, and had seen a case in a calf six weeks old, and also in well-nourished animals up to two years old. As a rule, it was a disease affecting animals on the approach of spring when the herbage was soft and nutritious, and when animals ate an overdose of immature herbage. The discovery of the bacillus of black-quarter in the third case, which had never been out at pasture or in contact with other animals, was very peculiar. Once he was called to attend a case of red-water in a cow in Cornwall. There was not a blade of grass within two or three miles of where the animal had been fed, the district was a mining one—and from a calf, it had been fed indoors, but no doubt the germs of red-water had been carried to her in the food or by the attendant. The oak leaves found in the stomachs of the first two cases, made him consider the cases to be stomach or head staggers.

Mr. ALMOND said that when he was in a black-quarter area, he used to have a few cases of what he called enteric black-water, in which the animals were found dead with no external lesions. Like the President, he had met with cases of black-quarter in animals up to 3 and 3½ years old.

Mr. FULTON, in reply, said the castration wound was perfectly healthy. He used a chain. The animal went on well, and the other was still alive and doing well. They had been twice inoculated with a double vaccine, and since then there had been no other case. It was said that black-quarter occurred in healthy and plethoric animals, but the beasts he referred to were grass-fed, and were very plain animals. It seemed peculiar that one case should occur in a field, and the other five days afterwards, two fields away from the first one. With regard to the possibility of stomach staggers, the first animal was dead, and the second one was perfectly conscious but appeared unable to get up. He quite agreed that infection could be carried by the feet. Cases Nos. 3 and 4 were fed by the cowkeeper, who was never near the two previous cases. His work was to look after the inside cattle, and not those in the fields. As far as he could make out, there had been no known cases of black-quarter for years on the farm or in the district, and there had been no sudden deaths before. He believed what Prof. Wooldridge had said, but it seemed to him rather strange that the bacillus of black-quarter should be clearly seen—per microscopic examination, and yet no symptoms of the disease shown prior to death.

Prof. WOOLDRIDGE said the point raised by Mr. McIntosh as to the fitness for food of animals dying of black-leg was an important matter. It was not suggested that a human being could be in any way affected with the organism of black-leg, and there was no doubt that in the case of animals found affected by the disease and slaughtered in time the flesh had been frequently

used for human food without any ill results, and gave no sign whatever, in the majority of cases, of the animal having been affected with black-leg. In some few cases, where there had been a rise of temperature, the tissues might be a little softer than they would be in a normal animal. Although such food had been eaten, and without ill results, he thought veterinary surgeons ought not to countenance such a thing being passed, nor should they say that such carcasses were fit for human food. When a person bought calf's flesh for food he was ostensibly buying something which was healthy, and if it could be shown that the animal had been affected with black-leg he believed damages could be obtained, apart from any injury to the purchaser, because the material supplied was "not of the nature and substance demanded" by the consumer. It was the carcass of a febrile, diseased animal, and should not be put on the market under any circumstances, even though it could not be detected that black-leg had been present. Mr. McIntosh had said he would defy anyone to detect from the flesh that an animal had had black-leg; he would defy Mr. McIntosh to detect from the flesh that an animal had been affected with miliary tuberculosis, but that fact did not render it fit for food.

Mr. McINTOSH said he did not suggest for one moment the use of the flesh of animals that had been killed in the early stages of the disease, but what he did say was, that it was frequently used, and was used still as a food. If he knew an animal had suffered from the disease he would never recommend it, but if he could not detect it, and the character of the flesh was normal, the veterinary surgeon was under no further obligation, and he had not known of any case where harm had resulted from its use.

Mr. FULTON said that previous to castrating the two beasts, the bailiff told him that some years ago they had a number of calves castrated—he thought about a dozen—and ten of them died shortly afterwards.

The PRESIDENT said he had never heard of a veterinary surgeon losing calves after castration.

Mr. MACCORMACK said he had lost three on one farm.

On the proposition of Mr. Almond, seconded by Mr. Stroud, a vote of thanks was accorded to Mr. Fulton for his interesting cases.

A vote of thanks to the President closed the meeting.

HUGH A. MACCORMACK, Hon. Sec.

THE NORTH OF SCOTLAND VETERINARY MEDICAL SOCIETY.

[NATIONAL V.M.A.—SCOTTISH BRANCH.]

The Half-yearly Meeting was held in Marischal College, Aberdeen, on Saturday, January 28th, Mr. Duncan Cumming, President, in the chair.

The following members were present:—Messrs. Anderson, Brown, Beattie, Clerk, Howie, Kerr, Murray, Morrison, Niven, Robson, Sievwright, and Skinner.

Apologies for unavoidable absence were received from Messrs. Crabb and McPherson.

The minutes of the last meeting and of a meeting of the Council of management were read and approved.

New Member. Mr. G. S. Mower, Rhynie, was proposed by Mr. Kerr, seconded by Mr. Brown.

The Secretary read a letter from Mr. Fred Bullock, joint secretary of the Anglo-Franco-Belgian Veterinary Relief Fund. After discussion, Mr. Sievwright moved and Mr. Anderson seconded, that the Secretary be empowered to send £2 2s. from the Society.

PRESIDENTIAL ADDRESS.

Mr. DUNCAN CUMMING.

Gentlemen,—Allow me to express to you my thanks for having elected me as your president for the ensuing year. It is with some diffidence that I undertake the duties and responsibilities of office, knowing how many able gentlemen have occupied the chair in the past. However, I will endeavour to do my best for our Society during my term of office, and respectfully ask the support of every individual member. I am already assured of the hearty support and co-operation of our valued Secretary to whom the society owes so much, and I would ask the presence of every member at our meetings. In my opinion any little trouble or inconvenience one has in getting away from his work is well repaid. Personally I look forward with pleasant anticipation to meeting my fellow members, and I always learn something from the papers and discussions, and the social intercourse is very enjoyable.

I had the pleasure of attending when a student the meeting called for the formation of this society, and have since been a member during the most of my professional life. I have watched how it has grown in strength and influence. I recollect our first endeavour to obtain more liberal recognition of our services to the local authorities, but the results were not very encouraging; and adversity only acted as a stimulus to our endeavours. The matter was tackled again and now we can look with pardonable pride on what has been achieved and the financial benefit we now enjoy.

We were all very glad to learn that the Government has now placed our profession on the same footing as the sister profession with regard to the rebate on the motor spirit tax, though not yet on the motor licences, but if we keep pegging away I have good hopes that even that will be granted at no distant date.

What has been done must surely convince the greatest individualist amongst us that if we want to advance we must unite and go forward as a body.

It is customary for a new president to make some remarks on current events affecting the profession. The gigantic struggle in which the nation and her allies are at present engaged has overshadowed everything else; the energies of the country are at present centred on the task of conquering a formidable and unscrupulous enemy. Let us hope that before the year 1916 closes we will have gained a glorious and honourable victory so that the peace of Europe may be assured, that the progress of science and industry for the good of mankind may proceed uninterruptedly in the future.

I am proud to say that our profession has done and is doing its duty with credit to itself and profit to the country, and I sincerely hope that at our next January meeting we will be able to accord a hearty welcome to the members of our own society who have so patriotically given their time and skill to the country in her hour of need.

Our retiring President in his opening address gave a very interesting and instructive paper on the changes which had taken place in the profession with regard to the prevention, diagnosis and treatment of disease during the past twenty-five years. The profession has advanced most satisfactorily when we consider that it has done so unaided by Government or other financial assistance.

We are all sorry to see that the Royal College, to enable it to keep afloat, is likely to have to study economy at the expense of efficiency.

It is very difficult to prognose as to our prospects in the near future once the country is again enjoying peace. I am far from being a pessimist, but I have no doubt that we will be affected along with other bodies.

Public Health authorities will have to study the financial means at their disposal, and fewer appointments in this field will be open to our members. Still, we have got the most valuable agricultural stock in the world which it is our special province to look after in health and disease. The stockowner has now learned to appreciate the services of the veterinary surgeon in his herd when there is trouble, rather than the advice of his so-called skilful neighbour. On the whole our prospects for the future may be regarded as fairly cheerful.

The thought has often occurred to me "is the country getting the full advantage of the skill possessed by our profession?" A leading agriculturist said to me one day, "we stockowners are not getting the assistance from your profession which we are entitled to expect considering what is being done by the medical profession for the human species." Gentlemen, I am afraid we must admit there is some truth in it. What is the cause of this condition? I say specialisation by medical men and surgeons! Consider what our doctors would do were they scattered as sparsely over the country as we in the north are, and no infirmary or hospital to send their poorer patients to, or nursing homes for their more wealthy ones, even although the average conditions they work under are more favourable for major surgical operations and their patients more easily handled than ours. I am afraid many more of their cases would have less favourable terminations than they have under present conditions, when the poorest can be speedily transported to the nearest hospital and have the advantage of the specialised skill of men who have made a life study of particular ailments. I am convinced that until we get something like the same advantages many valuable animals will be lost, not from want of the proper treatment, but because that treatment is handicapped by the surroundings of the patient. What we have to strive after is a properly equipped veterinary hospital in a central position to which we could send our patients when their condition is such that the attending veterinary surgeon cannot do justice to himself or his patient. I think most of you will agree that this state of things is not by any means rare in a busy practice. There are plenty of men who have a special aptitude for certain work. Some for surgery, some with a special faculty for diagnosis and medicinal treatment, and I have no doubt that if we had the place and the appliances the right men would be forthcoming.

Gentlemen, it is not customary to discuss a presidential address, but I would like if you would give this matter your consideration it might be discussed at some future date.

SOME NOTES ON ANTHRAX.

By D. CLERK, M.R.C.V.S., Stonehaven.

The prevalence of Anthrax in Aberdeenshire tempted me to introduce it as a subject for discussion, as I want some information.

My notes resolve themselves into two questions. The first is, "What symptoms are to be seen in animals suffering from anthrax?" My experience in the living animal is very limited, and I think I can best answer the question by describing a few cases.

Case I. You will excuse me for going into details in this case, for my diagnosis was wrong.

Subject. Black polled yearling heifer.

History. She was one of a herd grazing in what the owner called "The Den"—a deep hollow with a marshy bottom. She was found one morning standing apart from the rest of the herd, was very dull and unwilling to move, in fact, she had to be pushed along all the way home. During the journey she passed urine which the owner said was like stout. I saw her about five o'clock that afternoon: she was very dull with the head carried low; rigors well marked, and a temperature of 102.6° F.

When made to walk, which she was very unwilling to do, she showed lameness on right hind leg. I drew off the urine, and it was exactly like what we get in a case of redwater. At four o'clock the following morning the owner found her, as he said, at her last gasp. So he bled her, and sent for a butcher to take off the skin and open her up.

A few hours later I saw the carcase and was surprised to find a typical anthrax spleen, and petechial spots everywhere inside the carcase. The capsule of both kidneys, especially the right, contained a quantity of reddish-yellow fluid. Taking into account the condition of the urine, the comparatively normal temperature, and the nature of the ground where the animal was grazing, I came to the conclusion that it was a bad case of redwater. Is it possible or probable that the two diseases were co-existent?

Case II. A two-year-old fat bullock was seen to be unwell about mid-afternoon. I saw him at nine p.m. His temperature was 107° F., with slight rigors present. Occasionally he kicked at his belly with his right hind foot indicating abdominal pain. Further than what I thought to be an anxious expression on the face, there were no other symptoms noticeable. He died at 7 o'clock next morning.

Case III. A two-year-old bullock: Symptoms much the same as in Case II., only the pain was more acute—the animal rising and lying, kicking at the belly, and moving off one hind foot on to the other, and sweating. He lived only a few hours after he was seen to be ill.

Case IV. A milk cow. I did not see this case during life, and simply mention it as interesting to me for the time the illness lasted—she was ill from midday on Saturday until Monday morning. The case would probably never have been reported but for the fact that the owner had two cases on the farm before.

The second question is—"Do animals recover from an attack of anthrax?"

About 14 or 15 years ago the then travelling inspector for the Board of Agriculture and Fisheries asked me that question, and I remember giving a decided answer that they do not. His reply was that a Professor well known in the veterinary profession said they do recover. Were I asked the question to-day my answer would not be so decided. Cases crop up now and again where the symptoms resemble those of Cases II. and III., but whether they are anthrax or not I do not know.

There is one farm in particular where I had three such cases one winter lately. All three were bullocks heavily fed on cake, corn, etc., and exhibited much the same symptoms. Nothing much was seen wrong in the morning, we will say, eating as usual and cuddling, but by midday refused all food, dull, with a temperature of 106° F. Symptoms of slight pain and occasional tremors or shivering. In from two to four days they recovered, and there was no further trouble.

Now, Gentlemen, I will be glad to hear your opinions and have the benefit of your experience.

DISCUSSION.

The PRESIDENT: We are all indebted to Mr. Clerk for bringing before the meeting a subject of so much importance to country veterinary surgeons. I now invite discussion on the points brought out.

Mr. NIVEN: I think recovery in cases of anthrax possible. I have on more than one occasion had a case of anthrax and found the stall companion of the dead animal showing a temperature of 107.8° F., and well marked rigors. Treated with Carbolic acid and Turpentine the case recovered.

Mr. BEATTIE: I would like to thank Mr. Clerk for his notes. I also am of opinion that anthrax is curable occasionally. In Case I. it is quite possible that the kidneys were affected with anthrax.

Mr. ANDERSON: I am very much interested in Case I. I have on several occasions had anthrax cases showing red urine, but always associated with a high temperature. I really cannot say if the disease is curable or not. When dealing with anthrax cases, one often finds several animals exhibiting high temperatures. I find that these usually recover spontaneously. I have had recoveries in cases treated with carbolic and turpentine.

You will get cases of anthrax hanging on for four or five days before death occurs. This was not observed thirty years ago. I don't think treatment with carbolic acid and turpentine is of any importance, as many cases will recover without treatment.

Mr. SIEVWRIGHT: I would like to thank Mr. Clerk for his interesting notes. Case I is peculiar in being associated with redwater. Cases treated with internal antiseptics are often successful, whether the drugs are of any benefit or not. I would like to know how to distinguish the bacilli of anthrax from those of malignant oedema.

Mr. ROBSON: I congratulate Mr. Clerk on his paper. I think diagnosis of anthrax during life hardly possible. As to treatment, a client of mine had four cases of anthrax. Other three showed the same symptoms. I treated them with Sodium hyposulph. and all three recovered.

Mr. KERR: I had a heifer with a temperature of 107 and rigors. I gave turpentine in oil. Next morning the temperature was normal and the patient well. Case I is interesting. If I got a case with a temperature of only 102°, I would not like to call it anthrax. I had one case ill for a week before death supervened.

Mr. BROWN: I am greatly indebted to Mr. Clerk for bringing up some very important points. Regarding the diagnosis of anthrax during life, we have not sufficient data to work on. All you see are symptoms of fever and rigors. The first case is most important. The remarkable thing is the low temperature; two diseases may have been running together. I think Mr. Clerk's diagnosis was quite excusable.

Do animals recover? It is a doubtful point, but there is no reason why they should not, as the blood inhibits, if it does not destroy the growth of bacilli: but if anthrax bacilli once gain access to the blood stream death is rapid.

For treatment I would try Turpentine, Carbolic acid, Lugol's solution, and Soda hyposulph. Regarding Mr. Sievwright's question about malignant oedema—the bacillus of this disease is found in the soil, and is in the intestines of all animals. After an animal dies from anthrax, the anthrax bacilli use up all the oxygen in the blood, so that the bacillus of malignant oedema gains access to the blood stream and thrives there. If the carcass is some time dead, one often gets a mixed infection as a result of this invasion. The best stain is McFadyean's, and it is almost a diagnostic. You get the bacilli stained nearly black, while there is the peculiar pinkish purple debris surrounding them, and with an opening between. The bacilli are roughish in outline, while in malignant oedema the bacilli are smoother, fewer in number, and do not stain so darkly. I don't think it is wise in doubtful cases to give an absolute diagnosis at the farm, as one has neither the time nor appliances for a minute examination.

Mr. SKINNER: Regarding the curability of anthrax, I am a living monument to the fact that it is curable in man. I was unfortunate enough to be infected one day, but my medical man managed to attack the disease before it became a general infection, therefore I am here to tell the tale. In Mr. Clerk's Case I., I am of opinion that the redwater was a result of anthrax. The low temperature was probably due to the fact that Mr. Clerk got his case at a late period of illness when the vitality was at a low ebb. I once examined a carcass which had been treated for redwater by another veter-

inary surgeon for three or four days: I found on microscopical examination that it was a case of anthrax.

Mr. MORRISON: I have had a large experience of anthrax in cattle, horses and dogs, and I don't think diagnosis is difficult if you get fresh samples of blood. If the case is two or three days old, you may get confused between anthrax and malignant oedema. During life any man may be mistaken in his diagnosis as far as cattle are concerned, but with horses there is no difficulty, as you always get the throat symptoms. I once took a blood sample from a horse three hours before death, but found no bacilli.

Mr. HOWIE: I am very much indebted to Mr. Clerk for bringing forward such an interesting series of cases. Regarding Case I., it is quite possible that the red urine was due to anthrax localized in the kidneys, and that the low temperature was due to the late stage at which he got his case, when the animal was sinking fast. As to the possibility of cases recovering from anthrax. I think it is quite possible if you can attack your disease before infection becomes general. I am quite certain that I have had many cases of recovery if my diagnosis was correct. When one gets a death from anthrax in a byre, and finds probably the stall companion with a temperature of say 106° and still feeding well, what can he call it—if not some form of anthrax? I always depend on turpentine and oil, and generally find that the temperature is normal next morning and the animal feeding.

The PRESIDENT: I think it is quite impossible to diagnose anthrax during life, and Mr. Clerk is to be pardoned if he did not diagnose Case I. correctly. Treatment may have no effect, but I know that cases do recover when given doses of Turpentine and internal antiseptics. Some of the high temperatures may be due to heavy cake feeding, especially when getting awed at same time. I have tried to get anthrax bacilli in the blood before death—but have failed. From this I would reason that the lesion is local until a very short time before death. When it does once gain the blood stream, the bacillus of anthrax must multiply at an awful rate.

Mr. CLERK: I have to thank you, Gentlemen, for your kind reception of my notes, and for your discussion. I am inclined to agree with Mr. Anderson that the low temperature in Case I. was due to lowered vitality, and I am aware that some cases of anthrax will linger on for days. I had a case in which the farmer physicked and gruelled, a cow for three days which, on death, was found to be anthraxed.

PARTURIENT REDWATER.

By ALEXANDER NIVEN, M.R.C.V.S., Inverurie.

Mr. President and Gentlemen,—When Mr. Howie wrote me that he was depending on me to open the discussion on some subject for this meeting I thought he should have asked some abler and more experienced member to do so.

I have chosen Parturient Redwater for various reasons. Since I started practice I have seen a good few cases of it, and I have had encouragements and disappointments in the treatment. I have tried many means of combating it, but my chief object in bringing it up here to-day is to encourage a discussion. It is approaching the season of the year in which I meet practically all my cases, and I have no doubt every member practising in the north has seen it very often—oftener, I presume, than he wished. Speaking personally I like it ill, from any point of view, for the reason that I never seem to know where I stand in regard to it.

Now one can never say for certain that he can cure any disease, but with parturient redwater one seems always to be groping in the dark. I have at times thought that I had found a specific for it, but when my

next case proved fatal under the same treatment I saw that success had not been mine.

Parturient redwater is a hæmoglobinuria of newly-calved cows, generally occurring after calving up to three weeks; after that period a cow is considered safe. The more severe forms arise soon after calving. In some districts it appears in a mild form, while in others it assumes a very severe form.

Generally speaking, the first indication of anything being wrong is that the urine froths when it falls. Diarrhoea follows, and the faeces come away through a very contracted and puckered anus, as if the anal muscles could not relax. The pulse is slightly altered, and I have never seen the temperature raised, not even in a case seen very early in the attack. As the disease advances the appetite suffers, rumination becomes less regular, and the cow becomes dull. The diarrhoea stops and constipation sets in, and the pulse becomes more frequent. There may be some yellowness of the mucous membranes and skin; in numerous cases I have not seen the latter, but I remember a case in which both were well marked. The urine is distinctly red by this time. If the disease progresses, the urine becomes redder and redder, and finally almost black. Milk is not entirely suspended, but when it is allowed to settle one finds a reddish sediment at the bottom of the milk pail. I have often noticed the absence of any colouring in the milk.

The bowels become still more constipated, ears and extremities cold, and a very noticeable feature ere this stage is reached is the highly excited heart's action and pale mucous membranes, in fact, one could safely diagnose a case of parturient redwater by these two symptoms, without ever seeing the highly-coloured urine: I remember in my first two or three cases being rather alarmed by the action of the heart. In a few fatal cases I have had distinct brain symptoms, brought on, I suppose, by anaemia of the brain. Necrosis of the extremities often takes place, but latterly I have not seen so much of this condition. If death of the distal parts of any of the legs takes place it is often best to have the patient slaughtered.

The diagnosis is very simple, in fact to my mind it is the only simple thing about the disease. You have the highly-coloured urine, excited heart action, diarrhoea, and if case is well advanced, constipation, pale mucous membranes and no fever, and the fact that the cow has recently calved.

ETIOLOGY.

The etiology of the disease is very important from our point of view, for until we get at the cause of any disease we can never get a specific for its cure. The cause was one time thought to be injudicious feeding on turnips, too much sugar in the food, bad drainage and cultivation of the soil, and there is no doubt we see less of it as the years pass by owing to improved methods of farming.

Nowadays it is generally recognised by the profession that the disease is Bovine Piroplasmiasis, a disease caused by a parasite in the blood—the *Piroplasma Bovis*. About ten years ago, owing to the great similarity between Texas Fever and this disease, the blood of affected animals was examined by Nocard, Mettam and Montgomery. This led to the discovery of the *Piroplasma Bovis*. The parasite is transmitted from animal to animal by inoculation and the transmitting agent is a tick. The ticks in the British Isles are the *Ixodes Ricinus* and *Hæmophysalis Punctata*, and they are found in the grass and bushes in rough, low-lying land. On the ground they do not travel far, hence redwater is confined to certain districts. They attach themselves to cattle at either stage—larval, nymphal and adult. In either condition they become attached for from three to five days, and gorge themselves with blood, after

which they drop off. When on the ground, the female lays eggs in about a week, the number varying from 100 to 1000. The time taken for the development of the tick depends upon the conditions of temperature and moisture, and the presence of a suitable host. The eggs, larvae and nymphae, may hibernate during the winter; it usually requires five months for the life cycle, and the tick may transfer the disease at either stage. It ingests the virulent blood from an infected animal, and this virulent material being retained in the succeeding stages of the tick probably undergoes some as yet unascertained changes. The virulent material is inoculated into the next host, and if the host be a susceptible animal redwater results. After recovery from redwater the animal has a high degree of immunity but still retains the piroplasm which will infect a susceptible animal if inoculated in quantity.

Now, do we all agree that parturient redwater is a piroplasmiasis? Speaking for myself I cannot say that it is not, but parturient redwater differs in some of its features from the ordinary redwater of bovines. I have come across only a limited number of cases of the non-parturient form, and each case I have seen had a high temperature and was mild in degree, when compared with the parturient form that I have met with. Still, in Hoare's System of Medicine it is said that in cases of parturient redwater, where the disease has been thoroughly investigated the piroplasma *bovis* has been found in the red blood corpuscles. I remember Mr. Brown telling me that he demonstrated the piroplasma *bovis* in the blood of a redwater case when he was practising at Banchory, and if I remember rightly it was not of the parturient form.

Should we not see more of the ordinary redwater in districts where we see such a lot of the parturient form? Also, is it not a queer coincidence that it attacks cows about two weeks after calving? Ten to fourteen days is the usual time; I think perhaps two or three years ago there was a dearth of turnips in my district, consequently the cattle had to be fed on other foods, principally grain, and its offals. I had hardly a case the whole of these spring months; while next year, when there was plenty of turnips—in fact more than plenty, I had numerous cases. This was very striking and remarkable.

I have never seen or heard of a case of ordinary redwater in which gangrene of the extremities was present. I have several times seen this in parturient redwater. I have seen a cow recover from the disease with the phalanges gone and standing on the ends of metacarpals and metatarsals. Several times I have seen the tail and tips of the ears gone.

In ordinary redwater it is said the attack is sudden, while in the parturient form no one could say the attack or onset is sudden. If observant, one notices no dulness in the early stages of the parturient form, in fact a cow will be ruminating and looking distinctly well when the urine is red. Also in the latter the diarrhoea precedes the constipation, while in the former the opposite is the case.

The post-mortems differ also. I have several times made post-mortem on parturient redwater carcasses: the muscles are so pale that one would suppose that the animal had died from hæmorrhage. They had also a yellowish appearance, with degeneration of the liver and kidneys, while in the other form you find extravasations of blood and small petechiae and constant enlargement of the spleen. It is quite possible, however, that the two diseases are similar as regards their etiology, only that the parturient form is more severe and certainly more fatal.

TREATMENT.

The treatment is, from a country practitioner's point of view, most important, and I suppose everyone here

has a form of treatment of his own. In the first place, if the cow is feeding on turnips, and especially if they have their tops, I discontinue them immediately and give a little oilcake, bran and oats, and hay if oat-straw had been given previously, and pay particular attention that no food of any kind is allowed to be in front of the patient. Of course, in a goodly number of cases when the disease is well advanced and appetite and rumination gone one requires to give stimulants in some form: I generally give gin, ether, porter, eggs and milk. The medicinal treatment I have tried has been very varied. Principal Dewar, who must at one time have seen and treated a large number of cases, and who also did a large amount of work in the pathology of this disease, used to tell us that he never found iron of any use in combating the disease unless in the convalescent stage. Strange to say I have great faith in a mixture of Tinct. ferri perchlor., 1½ ozs., and Ac. sulph. dil. ½ oz. I have had recoveries from a powder containing Pot. nit., Pot. chlor., equal quantities. I have used Quinine in four-dram doses, and Pot. chlor. alone. Friedberger and Fröhner recommend alum, tannin, and acetate of lead. I have tried Adrenalin in two-dram doses with bad results. Of course, I give laxatives from the start of the treatment, but not in purgative doses: I rather repeat the dose than give a large quantity to start with. If one sees a case early enough a dose of Epsom salts, treacle and ginger will effect a cure without further treatment. Under those various treatments you will understand I have had failures as well as recoveries.

Lately, Nuttall, of Cambridge University, has recommended Trypan blue as a specific against redwater. The dose used is 100 c.c. to 200 c.c. of a 1% solution of the drug in water. One dose is sufficient to effect a cure, but if improvement does not result no second injection is of any avail. The Trypan blue colours the tissues and causes a temporary discolouration of the skin over the body to a deep blue. It appears to have a destructive effect on the Piroplasmata. It seems to have little effect when given by the mouth, and it acts more rapidly and satisfactorily given intravenously than when given subcutaneously.

Trypan blue should be dissolved as required, as the solution does not keep.

Perhaps I may be behind the times, but I have never tried this method, for when one meets with a fair amount of success with any one form of treatment he is loath to try anything new. We will always be handicapped in changing our treatment owing to the lack of experimental animals and to the enhanced value of them at the present time.

If anyone has been using the Trypan blue treatment I should like to hear with what results.

Now I have said enough, I think, and if I have managed to inspire a prolific discussion I shall be pleased.

DISCUSSION.

The PRESIDENT called for a hearty discussion of Mr. Niven's most excellent paper.

Mr. BROWN: I would like, in the first place, to congratulate Mr. Niven on the quality of his paper. I was very pleased to see in the agenda the title of his paper, as I have been exceedingly interested in this subject for a long time. Mr. Niven gave an excellent description of the symptoms of parturient redwater. There are two types of redwater: in the north of Scotland we meet with both varieties. If there is an abundance of turnips and badly harvested straw you can with confidence predict a parturient redwater year. In the piroplasma form you have always a temperature, while in the parturient type there is no rise. The former always starts with constipation; the latter with diarrhoea. In parturient redwater you very seldom get the piroplasma in the blood. I think the red corpuscles are broken up by something toxic in the food; therefore, I regard it as a

digestive disease. As a preventative give bran and cake for a fortnight before calving. When you see brain symptoms develop the case is invariably fatal.

Treatment depends on the stage at which you are called in. In the early stage, when the water is frothy but not very red and the bowels loose, give two bottlesful of Linseed oil with Turpentine; but later, no medicine should be given. If there is constipation a little oil or salts and treacle should be given as a laxative. Give plenty of stimulants, strong coffee, and two pints of Bass three times a day. Pot. nit. and Pot. chlor. are used medicinally. Trypan blue I have used quite a lot. It certainly does good in the piroplasmic form, given in one dose only. In the parturient form I am not so certain of its efficacy: I have had fairly good results with it, but whether due to Trypan blue or the other treatment used at same time I am unable to say. Redwater in freshly imported Irish cows is often due to the piroplasma, as much of the grazing land in Ireland is ideal for the growth of the tick.

Mr. KERR: I have had a good many cases of redwater in my time: the parturient form is most fatal. I have tried many drugs in its treatment. I give salts in small doses, common salt is very good. I have seen red herring well boiled and given juice and all tried. I have tried Adrenalin chlorid. without good result. Stimulants I regard as indispensable. I intend to try the Trypan blue treatment when I get a chance. I would like to ask a question—Is the flesh of a redwater carcass fit for human food? I don't think it is.

Mr. ROBSON: I am glad to say that in my district I see very little of this disease. I treat with eggs, milk, stimulants, Pot. nit. and Pot. chlor. I don't think a redwater carcass is fit for food. I regard parturient redwater as a very fatal disease.

Mr. SIEVWRIGHT: I get in my district redwater of both types, and it is really a vexed question whether they are both due to one cause or not. I am inclined to think they are two separate diseases. I have tried almost every remedy. Adrenalin at one time promised to be a specific, but now I regard it as unreliable. If your cow is three weeks calved before the onset of the disease, she has a good chance of recovery—if under two weeks, little chance.

Mr. ANDERSON: I have very little to add to what has already been said. I have had a long experience of the disease, and think it would be a good thing to get the cause definitely settled. Personally, I think the two diseases are distinct; I have never known of the piroplasma bovis being found in the parturient form. I am of opinion that an excess of turnips has a good deal to do with it; at any rate cows fed on large quantities of turnips take the disease readily.

Mr. BEATTIE: I think the disease is dietetic in its causation; this is shown by the diarrhoea in the early stages. For treatment I rely on stimulants—eggs, stout, milk, and Liq. ferri perchlor. fort.

Mr. SKINNER: My experience of parturient redwater is that it is dietetic in origin. You always see most of it when there is an abundance of turnips and a scarcity of straw. It is due to derangement of the liver, kidneys, and blood. Those animals attacked early after calving almost all die. The longer the interval after calving the greater the chance of recovery. I do not believe in giving large doses of salts: I prefer treacle as a laxative. I give stimulants—whiskey in large doses along with eggs and milk. I have had the best results from Liq. ferri perchlor., followed up with Ammon. carb. in the convalescent stages. Most of the fatal cases are due to syncope or heart failure. When you get a weak and fluttering pulse nothing is so good as large doses of neat whiskey. I don't think a redwater carcass should be passed as fit for human consumption, as it is bilious and anæmic.

Mr. MORRISON : I have little to add to what has been already said. It is well named the poor man's disease. I consider it purely dietetic and not contagious. I had a remarkable recovery in one case—a cow took red-water on the day of her calving, and I was astonished that she pulled through. I think it is a mistake to give large doses of purgatives : treacle is best as a laxative. Medicinally, I pin my faith on Liq. ferri perchlor. fort. and Hazelin, along with stimulants and nutrients.

Mr. CLERK : I have not had, I am glad to say, much experience of this disease except one year. I must have been fortunate in having a mild type, as I don't regard it as a very fatal ailment. I give salts, treacle, and stimulants. Adrenalin did all right with me. One thing I have observed is, that the temperature is often subnormal.

Mr. CUMMING (President) : My experience is pretty much the same as that of the rest of you. I have had two or three cases previous to calving, and one had it three times during the winter. Those cows had in the summer-time been grazing in a marshy hollow : I took these cases to be of the piroplasmic type.

REPLY.

Mr. NIVEN : I have to thank you, Gentlemen, for your discussion. My chief object in bringing this subject forward was to get information. The etiology of the disease is as yet uncertain, but I am fully convinced that the two diseases are quite distinct. You do not get Piroplasmata in the blood in parturient redwater cases. Carcasses should not be passed for human food. I think the gist of the discussion points to stimulants—Iron, Sulphuric acid and Quinine, as being the treatment most generally adopted.

Mr. BROWN asked the members to accord to Messrs. Cumming, Clerk and Niven a hearty vote of thanks for so splendidly contributing to the success of the meeting. This was heartily awarded.

Mr. BEATTIE undertook to provide pabulum for the next meeting.

Mr. KERR drew the attention of the Society to an advertisement in the daily papers in which a druggist of the name of Byth designated himself as a veterinary chemist.

The Secretary was instructed to communicate with the Secretary of the Royal College on the matter.

After the meeting, the members adjourned to the Athanaum Restaurant, where they lunched and enjoyed a pleasant hour together.

GEORGE HOWIE, Hon. Sec.

ARMY VETERINARY SERVICE.

WAR OFFICE, LONDON, S.W.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, Feb. 17.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieuts. to be temp. Capts. :—J. McL. Stuart (Feb. 4) ; J. H. G. Jerrom (Feb. 6) ; C. Nicholson (Feb. 8).

Temp. Lieut. J. Legg relinquishes commn. on rejoining Forces of Commonwealth of Australia (Nov. 26).

Feb. 19.

Temp. Lieut. to be temp. Capt. :—F. T. Barton (Feb. 9).

To be temp. Lieuts. :—T. Woods (Feb. 8) ; W. Sewell (Feb. 9).

Feb. 21.

Major to be temp. Lt.-Col. :—W. B. Edwards (Feb. 6).

Capt. (temp. Maj.) H. C. Stewart relinquishes his temp. rank on ceasing to be employed as Asst. Dir. of Vet. Services of a Division (Feb. 23).

Feb. 22.

To be temp. Lieuts. :—J. J. O'Neill, P. A. Carroll (Feb. 9).

(Feb. 23).

Temp. Lieuts. to be temp. Capts.—T. S. Hunter (Nov. 6) ; H. T. Hislop (Jan. 11) ; K. J. Urquhart, L. L. Steele, D. Pollock (Feb. 10) ; W. G. Sharpe (Feb. 12) ; L. H. MacQueen (Feb. 13).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Feb. 17.

Capt. W. Awde, F.R.C.V.S., is granted temp. rank of Maj. whilst holding the appmnt. of Asst. Director of Vet. Services (Jan. 23).

Feb. 21.

Capt. to be Major :—C. H. Gollidge (Jan. 24).

To be Lieut. :—T. M. Timoney (Feb. 22).

Feb. 22.

To be Lieut. :—J. F. D. Tutt (Feb. 23).

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended Feb. 19	10	15		7	2	6	79	179	10	67	240
Corresponding week in	1915 ...	17	18		1	1	†	†	6	62	175
	1914 ...	12	12	1	4	3	4	64	102	5	487
	1913 ...	15	16		1	1	90	165	10	29	280
Total for 8 weeks, 1916 ...	102	110	1	24	12	39	734	1885	127	608	1934
Corresponding period in	1915 ...	141	158		6	9	†	†	102	624	2591
	1914 ...	149	162	1	18	42	679	1298	102	423	3786
	1913 ...	103	116		27	85	689	1504	89	267	3136

† The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked :—Kent 4, London 1, Fife 1.

Board of Agriculture and Fisheries, Feb. 22, 1916.

Horses in Ancient Times.

Explorations point to the fact that early in the life of the human race, or during the Palæolithic or Stone Age, wild horses were abundant in Britain, France and Belgium, and were probably killed and eaten. In some parts of France enormous quantities of bones of horses and reindeer have, at various times, been found. Horses seem to have been the easiest to secure, judging from the fact that their bones at these particular stations formed a huge rampart, estimated to contain the remains of about four hundred thousand animals, the long bones of which had all been broken for their marrow. Came the Neolithic Age, and found the horse the slave of man—no longer an animal whose chief purpose seemed to be the furnishing of food for man, the conqueror. Also by this time the horse had become a valuable ally in war. This war-horse was very small, probably dun-coloured, and unquestionably shaggy-haired. It bore a close likeness, in fact, to the present-day wild horse of the Gobi Desert known as Prijwalsky's horse, which may indeed be regarded as the descendant of these ancient horses.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds:—

Mr. W. Packman, Bury	£1	1	0
Mr. W. Woods, Wigan	1	1	0
Lieut. W. Shipley, A.V.C. (S.R.)	1	1	0
Mr. J. F. Maguire, Liverpool	1	1	0
Mr. F. Morton Wallis, Halstead	1	1	0
Amount previously acknowledged	21	0	0
	£26	5	0

OBITUARY

J. A. R. TOWERS, M.R.C.V.S.

Graduated, N. Edin.: Dec. 1890.

Mr. Towers died at King's Lynn on February 9th, aged 47.

HARRY YOUNG, M.R.C.V.S., Withdeane Grange, near Brighton.
N. Edin.: April, 1883.

Death occurred on February 13, aged 58 years.

WILLIAM ROBERT EMERY, M.R.C.V.S., Guildford.
Lond.: April, 1879.

Mr. Emery died at his residence, 168 High Street, Guildford, on Tuesday last, 22nd inst., from pleurisy, after a prolonged illness, aged 64 years.

WRAGG.—On the 18th inst., at 4 Vernon Chambers, Southampton Row, Alice Sarah, widow of Francis Whitfield Wragg, F.R.C.V.S., in her 70th year. Interred in West Hampstead Cemetery.

CORPL. JOHN GIBSON, Leicester Yeomanry.

R.V. College, Camden Town. Killed in Action, Feb. 6th.

Mr. and Mrs. G. E. Gibson, Highfield House, Oakham, have received the distressing intelligence that their eldest son, Corpl. John Gibson, of the Leicester-shire Yeomanry, was killed in action in France, on Feb. 6th. The news was conveyed in letters from the Chaplain of the Regiment, and Capt. Hanbury, in command of A Squadron to which Corpl. Gibson belonged, and the utmost sympathy will be accorded Mr. and Mrs. Gibson and family in their loss. Corpl. Gibson, who was only twenty years of age, was educated at Oakham School, and at the time of the outbreak of the war was

attending the Royal Veterinary College, London. He had been in the Leicester Yeomanry for two years before the war, and upon the mobilisation of the forces when war was declared, he left his studies, and joined his regiment, with which he proceeded to France about October, 1914. He had had leave once since that period. Corpl. Gibson was one of the few who came out unhurt of the great battle of Ypres, on the 13th May. He was a smart soldier in every way, and was greatly respected by all who knew him. A memorial service was held in Oakham Parish Church.

Mr. and Mrs. Gibson have another son, Corpl. Wm. Gibson, in the Army Veterinary Corps.

VOLUNTARY SUBSCRIPTIONS TO THE R.C.V.S.

Sir,—The necessity for financial help to the R.C.V.S. is more apparent now than it has ever been. The question is one that concerns us, both individually and collectively. Times have changed greatly since the last general appeal for funds was made to the veterinary electorate. There is a chance now of both benefiting the R.C.V.S. and the country by timely response to an appeal for funds to the whole of the profession. Retrograde steps, when efficiency is more than ever needed, are doubly lamentable. We do not agree with "X.Y.Z." that an appeal for funds is not necessary. We think it ought to be made as evidence at this time of crisis that all that can be done to save the position has been done.—Yours truly,

G. MAYALL.

Sir,—Your correspondent X.Y.Z. has overlooked the fact that two members of Council have already subscribed to the College Funds—Messrs. T. S. Price and W. Shipley, vide your issues of Feb. 5 and 12. Also I may point out that although he does not see the necessity for an appeal from the Council, there are very many of us who consider it the proper course for the Council to take.—Yours, etc.,
COM. SOUTHTON.

The Central Veterinary Society.

A GENERAL Meeting will be held at 10 Red Lion Square, W.C., on Thursday, March 2nd, at 7 o'clock. Agenda.—Routine business; Specimens. "The significance of vomiting in animals," by the President. Fellows are specially requested to bring specimens and report interesting cases.

HUGH A. MAC CORMACK, Hon. Sec.

TOWN and country practice in a splendid agricultural district in one of the best dairying counties in England. Corporation and County Council appointments; old established; average returns for the last nine years between £500 and £600; central premises, rent only £35, can be worked with a motor cycle. Full investigation and introduction given. Address, 5012 V.R., 20 Fulham Road, London, S.W.

CLASS C Student desires post as locum or assistant during Easter holidays. Well up in general practice; steady, willing to work. Motorist. Address, 4024 V.R., 20 Fulham Road, London, S.W.

M.R.C.V.S. wanted immediately to manage a country practice near Blackpool, Lancashire. Live in and able to ride a bicycle. Must be steady and practical. State terms and send references to J. R. Gaultier, Solicitor, 62 Adelaide Street, Fleetwood.

[Late Advs.]

EXCERPT FROM MINUTE OF PUBLIC HEALTH COMMITTEE, GLASGOW, OF 7TH JANUARY, 1916.

The Veterinary Surgeon submitted his annual report, which was read to the meeting, and the following is a copy:—

Abattoir, Greenock, 7th January, 1916.

Gentlemen,—I beg to submit the following particulars as to the work done under the Veterinary Department for year ending 31st December, 1915:—

Weight of Carcasses Destroyed.				
	Tons.	Cwts.	Qrs.	lbs.
Tubercular ...	16	1	1	8
Other Diseases ...	4	11	3	10
	20	13	—	18

527 butchers' premises were visited and inspected. In six of these meat was seized and destroyed.

260 byres were visited and 4065 cows examined. One cow with tubercular udder was slaughtered.

8 cruelty cases were investigated. In two cases proceedings were taken and convictions obtained. In another case animal was destroyed.

5 suspected cases of swine fever were dealt with, necessitating over thirty visits to premises. One outbreak was confirmed and owner convicted. Another case is still in the hands of the Board of Agriculture.

The Veterinary Surgeon pointed out the marked decrease in the number of carcasses of cows totally seized for tuberculosis. He explained that in his opinion this was accounted for by the increase of minimum price before animals could be insured, and by the good effects of the Tuberculosis Order, which is meantime suspended. These circumstances led to a better class of cows being slaughtered, and not to any change in the methods of inspection.

	Tuberculosis.			Other Diseases.				
	Number Slaughtered.	Number Affected.	Percentage Affected.	Carcasses Seized.	Parts Seized.	Carcasses Seized.	Parts Seized.	Organs Seized.
Bullocks ...	3,092	344	11.12	1	10	7	4	759
Bulls ...	325	110	33.84	3	3	2	1	230
Cows ...	1,376	914	66.42	42	78	18	2	1,996
Heifers ...	690	127	18.41	6	9	4	—	238
Calves ...	1,430	5	.35	3	—	37	—	20
Swine ...	2,129	293	13.76	11	—	8	6	696
Sheep ...	22,149	1	.005	1	—	25	4	131
	31,191	1,794		67	100	101	17	* 4,070

* Organs of carcasses wholly seized not included.

Veterinary Societies—Addresses.

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THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1443

MARCH 4, 1916.

VOL. XXVIII.

PRACTITIONERS AND EXPERTS.

At the meeting of the Central Veterinary Society which we reported last week, Mr. J. D. Fulton communicated a series of peculiar deaths in cattle. One was certainly an atypical case of black-quarter; the others were not definitely diagnosed, but it seems at least very possible that they were of the same nature. This naturally suggests the possibility that atypical cases of black-quarter may be more common than we suppose.

There is nothing improbable in such a supposition. Thanks to our improved methods of diagnosis, we now know that many specific diseases appear under atypical forms much more frequently than we once realised. Again, typical black-quarter is so well known and so easily recognised that practitioners may well be excused for not suspecting the disease unless they see the classic symptoms. Other reasons, such as the observations of some practitioners upon the age-incidence of black-quarter, and the controversy which arose a few years ago regarding the temperatures met with in it, suggest that the accounts of the disease given in textbooks are not yet wholly satisfactory. Black-quarter resembles most unscheduled diseases, and even one or two scheduled ones, in this respect—that it illustrates the need for a closer collaboration between the clinician in the field and the specialist.

Perhaps the history of John's disease illustrates that need best. John's disease was first recognised in England less than ten years ago. It had certainly been prevalent here long before that; and, when it was first described to English clinicians, many were able to assert confidently that they had already seen it in practice. They had regarded their cases as being parasitic or tuberculous, though they had recognised some features which did not quite support either diagnosis. A more frequent collaboration between practitioners and pathologists might have enabled John's disease to have been differentiated long before, and so have saved much loss to stockowners. It was by such collaboration that the disease was discovered on the Continent; and, to judge from its wide distribution, it certainly might have been discovered earlier.

Very many practitioners are unable to call in an expert to assist on the spot. But most practitioners can make post-mortem examinations more frequently and more carefully than they now do, and can forward tissues and reports to an expert. Veterinary knowledge has been greatly advanced by this method; but, when we remember how comparatively few practitioners follow it to any extent, we must admit that much more progress is possible.

URETHRAL OBSTRUCTION IN A FOAL.

The following case may be of interest:—

In May, 1914, I was called to a valuable Shire foal five weeks old, stated to be making unsuccessful efforts to stale.

I found him to be as described, and very uneasy. An obstruction could be felt indistinctly in the urethra just above the scrotum. A large sized dog's catheter was introduced, and passed freely for about eight inches, when it was completely arrested. On withdrawal, material of a cheesy consistence adhered to the end.

After several vain attempts to push through or move the obstruction, the urgent need of an operation was impressed upon the owner, but to this he strongly objected, in spite of assurances that the case was critical. Finally, by persevering, the catheter was felt to pass the obstruction, when a slight flow of urine followed, possibly half-a-pint. On withdrawing the catheter, a slight quantity was passed voluntarily, but soon ceased. However, some relief was obtained.

A difficulty lay in obtaining a catheter of small calibre, but of sufficient length to enter the bladder, which was evidently greatly distended. The owner was instructed how to pass the instrument, with due precautions as to cleanliness: the process to be repeated at frequent intervals during the night, and a message sent at once if unsuccessful. Sedative medicine was left in hope that it would somewhat relax muscular contraction.

On visiting early next morning I was informed that the foal had been fairly comfortable during the night, and that slight success had each time attended the passing of the catheter until an hour previous, when there was no result, and pain had since rapidly increased. When I saw him he was in agony. It was evident that the bladder was distended to bursting point, and that relief had to be immediate. Being now given a free hand, some Codrenine was injected below the ischial arch, and urethrotomy performed. A gush of urine immediately escaped, but unfortunately the foal now strained severely. The flow suddenly ceased—my fears that the bladder would rupture were realised. He died shortly afterwards.

I made a post-mortem examination and found the obstruction—calculus, if it may be so termed, about the size and shape of a pigeon's egg, firmly lodged in the urethra. It was of cheesy consistency, and appeared to be composed of inspissated mucus. Bladder empty—huge rent, while mucous membrane was covered, particularly on the lower surface, by a very thick mucous deposit, slightly gritty to the

touch, flakes of which had broken away, and lay loose on the surface. Accumulation and cohesion of some of these had formed the obstruction. Kidneys—slight nephritis. Other organs healthy.

At first I was at a loss to account for the condition, especially the gritty feel of the deposit. Umbilical infection causing mild cystitis was a natural deduction, although at no time previous had there been any navel trouble nor had he shown the slightest sign of pervious urachus. As he had not commenced to eat, I thought possibly that the mare's milk might have a bearing on the matter. This directly gave another clue, which may be worth noting.

The previous winter, I attended the mare for an acute attack of articular rheumatism, involving hip, hock, and knees. She became sound, and her usual work was resumed. Later on intermittent hip lameness occurred which was particularly noticeable during cold, inclement weather. Stimulating liniments, salines, and rest, had always the desired effect. In addition, as a preventative, she was spared as much as possible during adverse weather conditions.

Is it therefore possible that all this time the mare's blood was heavily charged with uric acid and its derivatives, which being transmitted by the milk to the foal, irritated the kidneys and bladder and caused the recorded results?

I am sorry that I missed the opportunity of having the milk and deposit examined, which in view of this hypothesis would have been interesting.

C. W. CARTWRIGHT, M.R.C.V.S.

ABSTRACTS FROM FOREIGN JOURNALS.

ARSENICAL PREPARATIONS IN THE TREATMENT OF EQUINE PECTORAL INFLUENZA.

Reimers has published a new series of experiences in the treatment of equine pectoral influenza with neo-salvarsan. Eighty-three patients, some of them seriously affected, were treated. Only one died during treatment, and in this case the treatment had been commenced too late.

The neo-salvarsan was used in doses of 4½ and of 3 grammes, which were mixed respectively with 120 grammes, and with 100 grammes of a sterile 0.4% solution of Sodium chloride, and administered by intravenous injection. No lesions caused by the injection were ever observed.

Other similar preparations (atoxyl, plasmarin, and arsinosolvin) did not give such good results. The author concludes that neo-salvarsan is actually the best remedy for pectoral influenza, and that it gives 100% of recoveries when adopted in time.—(*La Clinica Veterinaria*).

THE DIAGNOSIS OF GLANDERS IN MAN.

Goldmeister and Jahn have published a contribution to this question. Cases of glanderous infection in man are, fortunately, fairly rare. In Prussia, for example, from 1907 to 1912, only sixteen cases were reported, ten of which terminated

fatally. Transmission to man is generally effected by a glandered horse; and the infected man may then in turn become a source of contagion.

In man, as in animals, two forms of glanders are distinguished—one acute and the other chronic. The clinical diagnosis, supported by the history, offers little security; and it should therefore be completed by bacteriological examination of the pus or of the nasal mucus, and by the serological test.

The direct isolation of the glanders bacilli from the pus of the abscesses or from the nasal mucus hardly ever succeeds, since the material is contaminated with many other species of bacteria. Recourse is therefore had to the endoperitoneal injection of suspected pus into male guinea-pigs. If the material is glanderous, the injection is followed by swelling of the testicles, and in that case the diagnosis is established by the culture of the specific germ from the scrotal pus.

The serological methods, which are in current use in veterinary practice, have hardly ever been adopted to diagnose glanders in man. For that reason, the authors have studied their value in three cases of human glanders which have come under their observation.

The first case was a young man of eighteen years old, whose right hand was injured by a kick from a horse. At first, the hand alone was greatly reddened and swollen. After some days, pains appeared in the articulations of all the extremities, with high continuous fever. Some weeks later the articular pains diminished; but painful swellings appeared upon the forehead, the left shoulder, and the right elbow. These swellings developed into abscesses, which discharged an abundant pus.

The second case, which speedily terminated fatally, was a young groom. The infection was localised in the nose, with an abundant discharge, ulcers, and furuncles. The temperature exceeded 104° F.

In the third case, which terminated fatally in less than three days, the pustules were rapidly disseminated into various parts of the body. Fever was very high, and death occurred with extreme cardiac debility.

The cultural isolation of the glanders bacillus was attempted and successfully effected in the first two cases. In all three cases the serological tests of agglutination, fixation of the complement, and conglutination proved themselves to be reliable diagnostic methods, and the authors say that they should never be omitted in the accurate diagnosis of human glanders. As regards the agglutination test, they remark that an agglutination of 1 to 100 or 1 to 200 has no value, 1 to 400 is suspicious, while one of 1 to, 800 enables glanders to be diagnosed almost with certainty.—(*La Clinica Veterinaria*).

IS LEUCOCYTOZON ANATIS THE CAUSE OF A NEW DISEASE IN DUCKS?

A. B. Wickware has published this note (*Parasitology*. 1915, June. Vol. 8, No. 1, pp. 17-21). The disease in question runs a rapid and fatal course,

about 70 per cent. of the affected birds succumbing. The first symptom is an impaired appetite, but the preliminary symptoms are not very marked.

In some cases the birds succumb in the first paroxysm, while in others there are exacerbations at intervals without producing a fatal result.

One of the attitudes taken up by the birds when in a comatose condition is with the head bent over backwards and resting on the back. If birds in this condition are roused they show evidence of intense excitement. The power of balance is lost, and they roll over and over, and the head is waved about in an extraordinary manner. In some cases the neck is turned completely round, the head resting on the ground in an upright position. A fairly constant symptom is a purulent ophthalmia. Recovered birds are very stunted in their growth.

The causal agent of the disease has not been determined, but in the course of his investigations the author discovered a leucocytozoon which does not appear to have been described before, and which is the subject of this preliminary report.

Parasites were found in all the diseased ducks, and they were present in smaller numbers in recovered birds. Contact birds which showed no symptoms were apparently not infected with the organism.

The predominant form was a spindle-shaped structure measuring 35 to 60 microns in length by 10 in width. There was an elongated or irregular-shaped nucleus, and a dark "chromatic band" running along one border of the parasite. Further study is required to settle definitely whether the organism is motile.

The only lesion found was acute hæmorrhagic inflammation of the intestine immediately behind the cæca. There was constantly an increase in the number of eosinophile leucocytes in the blood.

A limited number of inoculation experiments were carried out. In one of these two gamete forms were observed on the seventh day after intraperitoneal inoculation with blood. In these parasites the chromatic band was present, but no nucleus could be discovered. Three days later typical gametes with nuclei were found. These forms persisted for a few days and then disappeared. No mature forms were present in the smears. White rats appeared to be refractory.—(*Trop. Vet. Bull.*).

W. R. C.

ANNUAL ADMINISTRATION REPORT OF THE BOMBAY VETERINARY COLLEGE FOR THE YEAR 1914-15. [Abridged].

Mr. K. Hewlett, the Principal of the College, was absent on vacation leave and furlough for six months from 1st May to 1st November and Mr. M. H. Sowerby, the Assistant Principal, acted as Principal during the latter three months and Mr. N. D. Dhakmarvala, the Senior Indian Professor, acted as Assistant Principal and Mr. G. V. Dadhe, of the Subordinate Civil Veterinary Department, acted as Lecturer. During January and February Mr. M. H. Sowerby was compelled to take leave on account of illness and Mr. Dhakmarvala acted for him and Mr. Rebello of the Glanders and Farcy Department acted as Second Assistant Professor during that

time. During March Mr. Rebello was deputed from the Glanders and Farcy Department to assist with College work owing to extra duties being placed upon certain of the College staff.

There were 88 students' names on the rolls at the commencement of the official year; out of these 10 were eligible for re-examination at the Supplementary Examination held this year towards the end of April. Of the 10 students eligible only 9 appeared, one having given up the course, and of these six passed, *viz.*, one out of two in Class A, three out of four in Class B, and two out of three in Class C. These two having graduated left the College. Of the 86 students left, one died, six discontinued the course, and four were refused permission to appear for the Annual Professional Examination on account of not having fulfilled the prescribed conditions. Out of the 75 who appeared 54 passed. In the Final year, or Class C, 19 students presented themselves and 13 passed; in the second year, or Class B, 26 presented themselves and 21 passed; in the first year, or Class A, 30 students presented themselves and 20 passed.

In January, 1915, the commencement of the First Session, 60 candidates presented themselves for admission to the College. The Principal admitted 33 to Class A, one to Class B, and three to Class C. The remaining candidates were refused admission on account of educational or physical unfitness, or having failed to obtain scholarships did not join. There were thus 37 new admissions.

There were 103 students' names on the College rolls in January, 1915; of these 37 were newly admitted, 41 were students promoted to a higher class, 21 were failed students, and four who had not appeared for the examinations. Of the failed students six discontinued the course; of the four students not permitted to appear the names of three were removed from the rolls by the Principal.

Of the 37 admissions 33 were natives of the Bombay Presidency, one of the Central Provinces, one of the Punjab, one of Travancore, and one of Ceylon. Of the new students two had passed the First year Arts Examination, three had passed the School Final and four the Matriculation. The remaining 28 students passed the College entrance test or were otherwise eligible for admission. The new students classified according to caste 20 were Brahmins, two Amils, two Maráttas, four other Hindus, one Sikh, two Mahomedans, three Pársis, two Indian Christians and one European. This is the first year in which candidates having passed the First year Arts Examination have appeared for admission.

The monthly average of students occupying quarters in the hostel during the year was 74 as against 66 last year and 54 in the preceding year. The messing arrangements continue satisfactory.

Clinical instruction of students was carried out as usual in the Bai Sakerbai Dinshaw Petit Hospital for Animals which is affiliated to this College. During the year 3648 inpatients and 1125 outpatients were treated, a total of 4773 patients. Of these 924 were equines, 2579 bovines and 1270 others. The average daily attendance was 310.

Of the 15 students who graduated in 1914, nine are in the service of the Government or Local Bodies, two are in the service of the Native States and four are as yet unemployed. Of the 16 students who graduated in 1913, seven are in the service of the Government or Local Bodies, four are in the service of Native States, two are in private practice, and three are unemployed. Of the 21 students who qualified in 1912, 12 are in the service of Government or Local Bodies, six are in the service of Native States, two are in private practice, and 1 is unemployed. Thus, out of the total of 52 graduates who have passed out of the College in the last three years 28

are in the service of Government or Local Bodies, 12 are in the service of Native States, four are in private practice and eight are unemployed. Of the unemployed graduates some have repeatedly refused employment.

As usual during the long vacation, a course for training drivers of the Supply and Transport Corps as dressers was held. This year 14 drivers attended the course as against 18 last year and 12 in the preceding year.

This year the Post Graduate Course had to be abandoned owing to the extra duties being undertaken by the staff.

During the year under report the death occurred of Mr. V. C. Phatak, Head Clerk of the Principal's office. Mr. Phatak had held this position since the College was first opened in 1886, and during this period he had performed his duties with care and efficiency and to the entire satisfaction of his superiors. By his death the College loses an officer of great experience in dealing with students and Government, a trustworthy and faithful servant.

During the year under report the officers of this College have undertaken voluntarily certain extra veterinary work in order to assist as far as possible the Military authorities during the present crisis. In Bombay, during September, there was an outbreak of Surra among the mules of the Supply and Transport Corps, and 17 mules were destroyed and burned by this department. In October and November there was an outbreak of Glanders among the horses of the 63rd Battery, Royal Field Artillery and 17th Cavalry, and 38 animals were destroyed, *post mortem* examinations made, and the carcasses burned by this department. These outbreaks of disease and the *post mortem* examinations caused a not inconsiderable amount of extra work to Mr. Sowerby, the Acting Principal, and the College staff, Mr. Hewlett, the Principal of the College, was on 19th November appointed Veterinary Officer to the Bombay Light Horse and placed in veterinary charge of horses on the sick list in the Parel Cavalry Drafts Camp and to take charge of all animals found unfit to embark for one of the Expeditionary Forces. The Executive Committee of the Society for the Prevention of Cruelty to Animals, in order to enable Mr. Hewlett to do this, placed the stabling in the Bai Sak-erbai Dinshaw Petit Hospital for Animals at his disposal, and made other adequate arrangements for the treatment of the ordinary cases of the Hospital. The Hospital authorities also assisted Mr. Hewlett by making arrangements for feeding the horses and supplying him with the necessary attendants. Mr. Hewlett, assisted by the College staff was continuing to do this work at the close of the year. In consequence of these arrangements 250 inpatients and 228 outpatients have been treated, besides the ordinary hospital cases, between the 16th November and 31st March. The Instructor of Shoeing, ex-Staff Sergeant Farrier Town, also volunteered his services and has fitted 201 sets of shoes to military horses at cost price of the material used.

During the month of December Mr. Sowerby, who is an officer of the Bombay Volunteer Artillery, was called upon to do permanent military duty in addition to his own proper work. He continued to do this until, owing to illness, he was compelled to take leave. He returned to work on 10th March, and was continuing to perform both his civil and military duties at the close of the year. Mr. Hewlett volunteered his further services early in January, and was appointed Embarkation Veterinary Officer and took over his duties as such on January 27th. He was continuing to perform these duties in addition to his own proper duties at the close of the year. In consequence of the European officers of the College being fully occupied with the above-mentioned extra duties much extra work devolved upon the

whole Indian staff. The hospital duties were of an exacting nature, and those engaged in them could do but little else, thus throwing on to others a considerable amount of additional educational work. The office work was also greatly increased. No holidays of any kind have been taken by the staff, and a large proportion of the students willingly gave up their short vacation to assist as dressers in the hospital.

The Principal desires to record his appreciation of the way in which the College and clerical staff have performed their duties. All have worked very well, and have carried out their extra duties cheerfully and efficiently.

K. HEWLETT, I.C.V.D.,
Principal, Bombay Veterinary College.

The covering letter by G. F. KEATINGE, ESQUIRE, C.I.E., I.C.S., Director of Agriculture, contains the following passage:—

"The report indicates a good year's work, including the additional duties undertaken by a staff which can barely be considered sufficient for its ordinary work."

ULCERS NEW AND OLD: JEJUNAL FOR DUODENAL ULCERS.

The following excerpts are from the very interesting Hunterian Lecture, delivered at the Royal College of Surgeons, February 4th, by Sir John Bland-Sutton, F.R.C.S., LL.D., Surgeon to the Middlesex Hospital, and reported in the *Brit. Med. Jour.* of Feb. 19.

"It is the common opinion that the duodenal ulcer is caused by the impinging of acid chyme ejected through the pylorus on to the wall of the duodenum. The features surrounding the origin of a jejunal ulcer following gastro-jejunostomy seem to support the percussion theory, but so far the discussions on the mode of origin of gastric and duodenal ulcers pay but little regard to the influence of bacterial action. Most of us believe the stomach to be amicrobic as long as it can expel its contents, but observations on the fluid found in the abdominal cavity of patients with perforated gastric and duodenal ulcers prove that it often swarms with pathogenic micro-organisms, especially streptococci. These are introduced with food, especially milk, wittily described as 'our most polluted article of diet.'

It is noteworthy that a jejunal ulcer is rarely seen as a sequel to gastro-jejunostomy performed for the relief of cancer of the stomach. This may be explained on the ground that such patients rarely survive the operation long enough to permit a jejunal ulcer to form. It is established that a 'peptic jejunal ulcer' may make its appearance six months after gastro-jejunostomy, or be delayed ten years.

Some surgeons attribute these secondary ulcers to faults of technique, or a method of suture different from that employed by the surgeon who criticizes the report; or the suture fails to completely control the bleeding from the cut edges of the gastric or the jejunal mucous membrane, and a haematoma forms.

There is very little evidence available for the incrimination of silk or linen thread; persistent sutures have rarely been associated with secondary ulcers of the jejunum.

INDIRECT OPERATIONS ON THE VISCERA.

Few things are more remarkable in the history of surgery during the last quarter of the nineteenth century than the origin and development of operations on the viscera. This advance was the outcome of two discoveries—anaesthesia and antiseptics. Surgical boldness and dexterity have always been available: after the

discovery of anaesthesia surgical rashness knew no bounds, but sepsis curbed it. Since the detection of the cause of sepsis, and the discovery of means for preventing it, surgical enterprise has been safeguarded.

In dealing with the viscera surgeons advanced tentatively. The effects of the removal of a particular viscus, or even a portion of it, on the physical efficiency of the individual were unknown. The internal reproductive organs of women were regarded with almost fetish reverence. Instead of removing the uterus when occupied by fibroids, surgeons removed the ovaries with the hope of establishing an artificial menopause and inducing the fibroids to shrink. Gradually men realised that the ovaries are the dominant organs of sexual life. So with the prostrate. Ignorant that a big prostrate could be enucleated, surgeons, actuated by false ideas as to the effects which followed removal of the ovaries, excised the testicles, or divided the vasa deferentia, with the hope of causing the prostrate to atrophy.

In the case of the intestinal tract surgeons were content to make an artificial anus in order to relieve obstruction caused by cancer of the colon or of the anus. In 1881, Bryant, in the course of making an artificial anus, stumbled on a cancerous constriction, and the operation ended as an impromptu colectomy. Since that event resection of the bowel and short-circuiting have reduced colostomy to the position of an operation of despair.

The class of operations just considered may be called indirect operations—they may relieve the patient but do not remove the disease. To this class gastro-jejunostomy for the relief of duodenal ulcer may be added.

It is admitted that the most favourable conditions for gastro-jejunostomy are a pylorus blocked by an inflammatory mass, and a stomach with muscular tissue sufficiently vigorous to propel the chyme through the new stoma. A dilated stomach with an unobstructed pylorus is so unfavourable for gastro-jejunostomy that surgeons are at their wits' end to devise means for closing the pylorus, not only to compel the chyme to take the new route, but also to hinder an efflux of bile through it into the stomach. With an unobstructed pylorus gastro-jejunostomy cannot be relied on to cure a chronic duodenal ulcer, and as it exposes patients to the discomforts and risks of regurgitant vomiting and jejunal ulcers, I have gradually abandoned it as a routine method and prefer to excise the pylorus and the segment of duodenum containing the ulcer."

"It is difficult to describe with certainty the functions of the pylorus. That it delays the efflux of chyme cannot be denied, but the rapidity with which a foreign body is discharged from the stomach into the intestine indicates that its controlling influence is by no means great. Smooth foreign bodies under one inch in diameter when swallowed are soon propelled through the pylorus.

In the course of operations the normal pylorus, when first exposed, is usually firmly contracted. A few minutes later it dilates, and except for the vein that marks the boundary between the stomach and the duodenum, the pyloric sphincter is not easily seen. When the pylorus is excised it usually admits the index finger easily, but after the parts have been immersed in preservative fluids, such as a mixture of alcohol and water or formalin solution, they contract and the orifice is quite small.

The examination of museum preparations gives a false idea of the size of the pylorus and also of its functions. I believe the pylorus is extremely sensitive. Like the buccal and anal sphincters, it gives no indication of its existence unless chapped or ulcerated. A chapped lip makes feeding painful; an ulcer near the pylorus makes digestion an ordeal; and an ulcer at the anus makes defaecation a daily terror.

The common form of dilated stomach—nicknamed

plashy stomach—which was mainly responsible for bringing routine gastro-jejunostomy into disrepute, is worth some attention. I believe it is caused in some cases by spasmodic closure of the pylorus. Just as the small painful ulcer, or fissure, of the anus leads to irritative action of the anal sphincter, often ending in dilatation of the rectum and the pelvic colon, so repeated spasmodic contraction of the pyloric sphincter will produce dilatation of the stomach. Convinced of this correlation of events, I have excised the pylorus in such cases, with good consequences, but on the whole the conditions which give the best results to this mode of treatment are those in which there is a gross lesion at the pylorus.

Excision of the pylorus cannot be regarded as a serious physiological loss. Removal of the pyloric half of the stomach or of the whole stomach does not interfere with the nutrition of the body. I removed the stomach from a woman, aged 35, for cancer. She survived the operation three and a half years. A year after the operation she reported herself, and at that time was in excellent health. She complained that she could not eat so big a meal as her husband, but she made up the difference by 'eating two meals to his one.'

It is surmised that the pyloric sphincter hinders the premature escape of undigested food into the duodenum. It has also been suggested that spasmodic closure of the pylorus, originating reflexly from the ileum, is protective against overloading the small intestine with insufficiently digested food. This is amusing, for the idea presupposes the existence of mentality in bowels, a function usually regarded as the exclusive property of the cerebrum. Keith's observations on the islets of ganglionic nerve tissue in the walls of the intestine suggest that thoughts may arise in a man's bowels as well as impulses suggesting ideas; indeed, Menenius Agrippa's famous fable of the Belly and the Members may have more foundation in fact than the retort of Balaam's ass."

Summary. Since the treatment of duodenal ulceration passed into the province of surgery it has become the routine practice to perform gastro-jejunostomy for its relief, in the hope that, by diverting the chyme through the new stoma into the jejunum, the ulcer will heal. If the pylorus is obstructed by the ulcer the results are usually good, because the chyme must flow through the new stoma, but when the pylorus is patent the chyme flows through it, and in some instances ignores the new route. This is not imagination, for the efflux can be watched with the aid of an opaque meal and x rays. I believe it is better, whenever practicable, to excise the pylorus with the ulcerated portion of the duodenum and rejoin the stomach and duodenum on the principle of an end-to-end anastomosis. If this method could be made safe, gastro-jejunostomy for the relief of chronic duodenal ulcer with an *unobstructed* pylorus would soon be abandoned.

Experience proves that posterior gastro-jejunostomy with an *obstructed* pylorus is a beneficent operation, in spite of the risk the patient runs of getting a new ulcer for an old one. The new ulcer has been evolved during this generation by alterations in the environment of the jejunum brought about by surgery."

At a county meeting held at Dorchester recently, to consider the question of light horse breeding, it was elicited that there was a very strong and unanimous feeling that, unless the Government prohibited the exportation of mares to foreign countries, say for a period of from three to five years, the future of light horse breeding would be seriously imperilled, and that the matter requires urgent attention in view of the demands which will arise from the effects of the war.

The Prince of Wales and the Shire Horse Society.

It was announced by Lord Northbourne, the retiring president, at the annual meeting of the Shire Horse Society, held at the Royal Agricultural Hall, Islington, on Thursday, Feb. 24, that the Prince of Wales had consented to become president-elect of the society for the ensuing year and president in the year 1917. The announcement was received with the heartiest satisfaction.

His Royal Highness has also become a member of the National Pony Society, and is taking an active interest in the improvement of native ponies, particularly in the Dartmoor breed. Visitors to the National Pony Society Show at the Agricultural Hall on Thursday, March 2, will see a group of his ponies competing with those from other pony districts in England and Wales.

In his speech at the meeting Lord Northbourne referred to the satisfactory council report upon the proceedings during the past year, the loss the society had sustained by the death of Lord Rothschild and Mr. L. Salomons, and the excellence of the present show.

Mr. E. Goodwin Preece moved a resolution to the effect that additional measures should be adopted for making better known abroad the merits of the breed with a view to ensuring a share of the trade for heavy horses that is expected to follow the restoration of peace to replenish the depleted studs of the United States and Canada, as well as in Russia, Belgium, and France. Mr. Farnsworth seconded the resolution, which was adopted.

An auction sale of stallions was the principal event in the proceedings yesterday at the show. The top price was 1,600 guineas, given by Mr. F. Farnsworth for Mr. Fernihough's second prize four-year-old, Forage Conqueror. This is the highest price ever made at these sales.—*The Times*.

Injections of Permanganate of Potash in Albuminuria.

Dr. F. V. Davison writing from Minas de Coriabo, Uruguay, to *The Lancet* of Feb. 19, says:—

"During the last twelve months I have seen one case of uræmia and three of albuminuria with general dropsy successfully treated with hypodermic injections of permanganate of potash. The case of uræmia, a negro boy 12 years old, was accompanied by convulsions and complete suppression of urine for over thirty hours. The medical man in attendance, seeing no improvement after a variety of treatment, as a last resource gave the patient an injection of 1 c.c. of a 1 per cent. solution of permanganate. In a few hours the patient commenced passing urine freely, the convulsions ceased, and in a fortnight the boy was perfectly well.

A few weeks later I was called in to see a boy of 10 who had been ill for two months with albuminuria and general dropsy. On the third day after my first visit he passed 50 grammes of urine in 24 hours. On boiling a sample of this urine the lower part of the test-tube became filled with a solid mass of albumin. I then gave him, in the arm, a hypodermic injection of 10 drops of a half per cent. solution of permanganate. During the following 24 hours he passed 1500 grammes of urine; on boiling a sample there was absolutely no trace of albumin. The case lasted over a month and a half. The albumin again made its appearance, but with three more injections of permanganate the dropsy completely disap-

peared, he got quite well, and has continued so for over eight months.

There is usually some local pain in the site of the injection, but this disappears on the application of hot fomentations. As a rule, there is a temporary rise of temperature lasting for a day or two.

Might it not be worth while trying in cases of wounds in the trenches an injection of 1 c.c. of a 1 per cent. solution of permanganate as near the wound as possible and as soon as convenient, in the hope that the oxygen set free may act as a germicide?"

The Glasgow Veterinary College (Incorporated).

A meeting of the Governors was held in the Secretary's Chambers, Glasgow, on Wednesday, 9th February. Present:—Sir Hugh Shaw Stewart, Bart. (in the chair); Sir David C. M'Vail, Principal W. G. R. Paterson, Prof. Glaister, Dr. Scanlan, and Messrs. Hugh Begg, Walter W. Blackie, Walter C. B. Christie, James Johnstone, J. Campbell Murray, Alex. Park, Horatio R. B. Peile, John Pollock, Peter Reid, John Wilson, D.L. and Mr. Alex. Russell (secretary). Apologies for absence were intimated from Messrs. James Rodger and William Strang.

A report was submitted by Mr Peter Reid on the subject of sheep diseases. On the motion of Professor Glaister, seconded by Mr. Reid, it was unanimously agreed to receive the report, and a sub-committee, consisting of Sir Hugh Shaw Stewart (chairman), Prof. Glaister (vice-chairman), Principal Paterson, and Messrs. Begg and Reid, was appointed to consider whether there is any source from which a grant for research work in this connection can be obtained at present.

It was reported that instructions had been issued to recruiting officers that *bona-fide* students of any recognised Veterinary College, who have been attested and passed to the Army Reserve, and who are now in their third or fourth years of study, are not to be called up for military service with their groups until they have completed their course of instruction.

The results of the recent examination for the diploma of the Royal College of Veterinary Surgeons were submitted and considered highly satisfactory.

It was reported that Mr. Alan Burns of Cumbernauld, had been reappointed representative from the County Council of Dumbarton, and Mr. William Strang, from the Glasgow Agricultural Society, on the Board of Governors of the College.

It was further reported that, as instructed at last meeting, the Roll of Honour and the gift made by the secretary to the Governors at the last meeting had been hung at the College.

Qualifications of a Woman Farmer.

"She should be capable of driving a binder for an hour or so in harvest time, while the waggoner gets his lunch, dinner, and tea, to save precious time that would otherwise be wasted by the horses standing idle. She must be able to mow tares for the pigs, go fencing, turn the turnip cutter, dig out lambs when snowed up; in fact, lend a hand anywhere. She will also see that the horses and beasts have their medicines at the right time when ill, and their special gruels, mash, etc., properly made."—*Farm and Home*.

[Rough on the horses?]

PARLIAMENTARY.

In the House of Lords on Thursday, Feb. 24th.

FOOT-AND-MOUTH DISEASE.

The EARL of SELBORNE, replying to a question by Lord Strachie, said that the outbreak of foot-and-mouth disease on the farm of the Somerset County Lunatic Asylum at Wells was the second outbreak in Somerset within the last few months. The illness was first observed among a lot of nine cows affected on February 6, and spread to the cattle at the home farm premises, and entailed the slaughter of one bull, 19 cows, 10 calves, and 30 fat pigs there, as well as of some other animals which had run danger of infection. No further report of suspected disease had been received and no further outbreak had been confirmed in Somerset. If no other outbreak occurred it was proposed further to modify the restrictions. No origin could be assigned for the outbreak on the asylum premises.

THE CALF-SLAUGHTERING ORDER.

LORD STRACHIE asked the President of the Board of Agriculture whether his attention had been drawn to the fact that the Calf-slaughtering Order had been to the detriment of the producer and the consumer owing to the minimum price being too low. He said that farmers believed that the effect of the minimum price was to make a ring of the butchers to whom the calves were always knocked down at 30s. If that price could be raised it would be an advantage all round.

The EARL of SELBORNE said that the only volume of protest against the Order which had reached the Board of Agriculture had come from the south-western and north-western dairy districts, where it had been disliked by the farmers. The objects of the Order were to prevent the slaughter of cows and sows that were pregnant, to restrict the slaughter of calves under six months so as to increase the store stock of the country, and to restrict the production of prime veal to a minimum. He had instituted inquiries, and local authorities had reported that evasion of the Order was the exception and that on the whole it was being observed. In the judgment of the 200 honorary correspondents of the Board the Order had effected its purpose and had done great good to agriculture. The Agricultural Consultative Committee were now unanimously of opinion that the Order had had an excellent effect and should be maintained.

It was impossible for him to consider seriously any suggestion for the repeal of the Order, but he was always open to consider suggestions for amendment put forward reasonably. It was alleged by farmers that butchers were making a ring and only offering 30s. for calves whatever their true value might be. If the farmer wanted a cow to rear why did he not go and outbid the butcher, or why did not the breeder of a good calf keep it 14 days and then send it to a market where there were plenty of farmers who would buy at a good price? The cure for the evil was not to be found in altering the maximum price, but in better organisation by the farmers themselves for the disposal of their goods. He would, however, consider the point which had been made.

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donations are reported:—

Veterinary Medical Association of Ireland	£10	0	0
Midland Counties Vety. Medical Association	10	10	0
Previously reported	81	7	0

Total £101 17 0

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, Feb. 24.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieut. H. G. Bowes to be temp. Capt. whilst holding a special appointment (Jan. 17).

Feb. 25.

Temp. Lieuts. to be temp. Capts.:—L. Littler (Feb. 10); W. S. Thompson (Feb. 12); S. E. Robson, R. N. M. Williams, R. J. Hall (Feb. 15); G. W. Roberts, T. C. Howatson (Feb. 16).

Feb. 26.

To be temp. Lieut.:—P. S. Howard, F.R.C.V.S. (Feb. 15).

Feb. 28.

Temp. Lieut. C. W. Baker relinquishes commn. on termination of his engagement (Feb. 19).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Feb. 24.

Capt. to be temp. Major:—P. J. Simpson (Feb. 25).

Lieut. E. Child relinquishes commn. on account of ill-health (Feb. 25).

Feb. 26.

Lts. to be Capts.:—D. Weir, Temp. Capt. R. E. Beilby, D. R. Chatterley, and to remain seed., Temp. Capt. M. T. Sadler, J. H. Thompson, J. Blakeway, A. G. Saunders, Temp. Capt. J. C. S. Powell, R. M. Aulton, L. W. Wynn Lloyd, Temp. Capt. C. R. Chadwick, A. C. Duncan, F.R.C.V.S., W. S. Lornie, A. F. Castle, F.R.C.V.S., P. R. O. Thrale, E. S. Martin, J. G. McGregor, F. E. Heath, W. D. Jordan, J. H. Wright, F. W. C. Drinkwater, W. D. Williams, Temp. Capt. P. S. Morgan, C. W. Cartwright, T. Thomson, R. W. Williams, J. H. Jones, R. H. H. Over, E. Berry, V. P. Jones, G. E. Henson, J. Y. Bogue, V. A. Bartrum, R. B. Palmer, J. R. McCall, D. R. Crabb, T. Bagshaw, Temp. Capt. A. J. Hines, T. A. B. Cocksedge, F. J. Moon, A. Robb (jun.), W. G. Thomson, Temp. Capt. A. R. Routledge, J. A. Shaw.

Lts. to be Capts.:—G. W. Bloxsome (Aug. 6); H. H. Lord (Aug. 7); F. B. Ditmas (Aug. 8); J. Facer, W. Aitkin (Aug. 9); P. S. Thierry (Aug. 10); A. H. Adams, J. R. Crane (Aug. 20); J. Sheffield, Temp. Capt. F. Hopkin, H. C. Taylor (Aug. 21); D. H. Rylands, J. A. G. Gosling, J. Southall (Aug. 23); C. Taylor (Aug. 26); L. A. F. Dawson (Aug. 27); H. Sumner, H. McD. Paul (Aug. 30); W. T. Olver (Aug. 31); A. J. Beckett (Sept. 1); J. C. Gaunt (Sept. 2); J. Cameron (Sept. 4); R. J. Sargent, C. W. Townsend, R. L. Armour, H. Newton, B. J. Rees, A. Mackenzie (Sept. 6); B. H. Benson (Sept. 7); F. B. Greer (Sept. 10); G. G. Sooby, G. M. Vincent, W. F. Wilson (Sept. 13); R. Bryden (Sept. 15); A. S. Chisholm, R. C. Matthews (Sept. 20); A. H. Watson (Sept. 23); J. Cunningham, C. Holland (Sept. 24); W. H. Townsend (Sept. 26); E. E. C. MacLachlan, J. W. H. D. Sarjeant (Oct. 1); J. Donaldson, J. F. Player (Oct. 2); T. S. Green (Oct. 3); W. F. Garside (Oct. 4); H. D. Sparrow (Oct. 6); J. F. Taylor (Oct. 8); A. H. Leyland, J. C. Storie, W. L. Sheffield (Oct. 11); F. Bradley (Oct. 18); J. G. Deans (Oct. 19); J. M. McMaster (Oct. 25); R. W. Clarke (Oct. 28); J. A. Craft (Oct. 30); W. H. Brown (Nov. 2); R. Simpson, T. Craig (Nov. 7); E. J. Laine (Nov. 13); J. R. Green (Nov. 16); S. G. Howard (Nov. 20); Temp. Capt. J. Bell (Nov. 22); G. O. Ogden (Nov. 28); E. R. H. Woodcock (Nov. 29); F. J. Rich-

mond (Dec. 1); G. C. Robertson, V. S. M. Cope (Dec. 24); W. P. S. Edwards (Jan. 2); H. A. Thorne (Jan. 3); W. G. Darling (Jan. 6); J. Daly (Jan. 14); D. Keir, G. Atkinson (Jan. 21); R. A. Edwards (Jan. 23); J. Spruell (Feb. 3); J. Martin (Feb. 11); C. E. Y. Bryan (Feb. 12); J. P. Heath, E. F. Angler (Feb. 14); A. C. Burton (Feb. 28).

The President of the French Republic has bestowed the "Medaille Militaire" on the following, in recognition of distinguished service during the campaign :—

Staff Sgt. (temp. Sgt.-Maj.) A. J. Warburton, 72.

Deaths reported from Oversea :—Sgt. T. P. Hutchins, S/E 429. W. Luke, 11462, accidentally killed in Egypt.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds :—

Mr. Mark Tailby, Birmingham	£1	1	0
Mr. H. H. Truman, March, Cambs.	1	1	0
Mr. A. P. Burgon, Haverhill, Suffolk	1	1	0
Amount previously acknowledged	26	5	0
	£29	8	0

OBITUARY

GRAY.—On Feb. 29, Catherine Victoria Hastings ("Queenie"), eldest daughter of Henry Gray, M.R.C.V.S., and Lavinia Grace Gray, 23 Upper Phillimore Place, Kensington, W., in her 23rd year. Memorial Service at St. George's Church, Campden Hill, W., at 11 a.m., and Interment at Putney Vale Cemetery, on Saturday, March 4th, at 12.30.

CORRESPONDENCE.

VOLUNTARY SUBSCRIPTIONS TO THE R.C.V.S.

Dear Sir,—I would like, without borrowing the words, to say, "your remarks on the above are timely and to the point."

I cannot enter into the controversy as to whether a guinea or half-a-guinea should be the sum adopted. I do know this, that there is no hope of voluntary subscriptions to the funds of the College on the whole. There are so many who will shelter themselves under the panoply of the College without for one moment making any attempt to save their Alma Mater.

I should be prepared to vote against any proposal of economy which would impair the efficiency of our examinations, but must, however, await a further discussion by our Emergency Committee.

My special point at the present time is this : We have a Treasurer who has had the confidences of the Council for some years. He says we cannot carry on our work without a voluntary subscription of £1 1s. a year from all the members until our new Bill is passed.

War has intervened since the Bill was promulgated.

Let us subdue all our private squabbles, and keep the old show going, and come and pay our whack.

I deplore the fact that few of the members of the Council have followed the lead of the Treasurer.

I admit that I have sent my guinea because the need was shown, but personally I believe in compulsion and not voluntary effort. I also deplore the fact that more

members do not help, and beg that non-de-plumes be not used. In the last list I observed the initials F.R.C.V.S. Is he ashamed he has the money to pay—or does he desire to deter others?—Very faithfully yours,

W. SHIPLEY,

Southtown, Great Yarmouth, Feb. 24.

My sincere apologies are due to Messrs. W. Shipley and J. S. Price from the fact that their names were overlooked in the list of subscribers.

Technically "Com. Southton" is right, but I adhere to the opinion that the Treasurer acted wisely "in locking the door before the horse was stolen."

Apparently Mr. Mayall is quibbling as to the necessity of appealing for funds. Methinks if the entire Council subscribed to the Treasurer's appeal, the result would be more satisfactory than their appeal to the profession; and much as I would regret to see the R.C.V.S. become bankrupt—to my mind it would be preferable—rather than putting into force the retrograde proposals of the Council.—Yours truly,

X. Y. Z.

State Horse Breeding.

The following extract is taken, almost in full, from an article by "Hotspur" in *The Daily Telegraph*. We have previously reprinted several extracts from the same source, but the subject is of so great importance nationally, and of such material interest to the profession that it merits full consideration.

To-day (Feb. 29) at the Royal Agricultural Hall, Islington, there will be held the annual show of thoroughbred stallions for King's premiums and super-premiums, offered on behalf of the State by the Board of Agriculture and Fisheries. Each King's premium is of the approximate value of £326, the twelve super-premiums for stallions of exceptional merit being worth in addition £100 each. The total prize money represents a little over £20,000. It is the extent of the Government's aid in the encouragement of horse-breeding. Before another year has passed, however, we may be told of a largely augmented grant of money, for it is not long since that Parliament was presented with a striking report from Lord Middleton's Committee, which was appointed to "consider and advise what steps should be taken in England and Wales to secure an adequate supply of horses suitable for military purposes."

Sixty premiums are being offered to-day. The committee, among its recommendations, urged that 150 should be given by progressive stages, and one recalls that in July last Lord Kitchener, in the course of a letter to Lord Selborne, said : "I hope, therefore, that you will do your utmost to secure the approval of the Treasury to the adoption of some scheme of State-aid. The question is one of military importance, and it is essential that it should be dealt with on large and comprehensive lines, and at the earliest possible date." I have good reason for stating that nothing has yet been done to carry out this committee's proposals, for the simple reason that no funds have been placed at the disposal of the Board of Agriculture. The National Stud at Tully is being carried on under the direction of Capt. H. Greer, senior Steward of the Jockey Club, but its practical usefulness will be nil unless it be made a detail of some importance in a general and comprehensive scheme, so framed that it may arrest the alarming decline of light horse-breeding for war purposes in this country.

CONTINENTAL POLICY.

Prior to the outbreak of the war, all the military nations of Europe paid the greatest possible attention

to horse-breeding for war purposes, in order that the demands of actual war-time should be no greater than those of peace-time. They bought our thoroughbred sires and for years drained the United Kingdom of mares. It was the aim of those countries—France, Germany, and Austria—that a sudden call to arms should not make it necessary for horses to be forthcoming other than from within their own respective frontiers. The war footing was to be neither more nor less than the peace footing. Could we have foreseen that the day would come when we should be maintaining armies of anything from one to two millions in the different theatres of war, and have great reserves in training at home, we should doubtless have had in operation an infinitely more extensive scheme of State horse-breeding than that which was in existence at the outbreak of war, and which, indeed, is still in existence with no immediate prospect of satisfactory enlargement. The committee to which I have referred went to the extent of saying that the encouragement of horse-breeding should be recognised as a permanent activity of the State. It will be admitted that matters might have been much worse but for the comparative eclipse of the cavalry arm by the new conditions of modern warfare.

THE SYSTEM IN FRANCE.

For the simple explanation of what the system is, or was in France just before the outbreak of war, I am indebted to some strikingly interesting and lucid notes compiled during a brief visit to France in April, 1914, by the British Director of Remounts (Major-General Sir W. H. Birkbeck), who has been responsible for the organisation by which the British Armies, and in some measure the armies of our Allies abroad, have been equipped with horses and mules from the United Kingdom, certain of our Colonies, and America. These notes, first issued in brochure form, have now been included in the latest volume of the Hunter Improvement Society's Stud Book.

We are told that "the breeding of horses of all kinds is directed by a most efficient branch of the Minister of Agriculture, staffed by highly-trained professional enthusiasts. Their avowed aim is to guide production along sound lines, which shall provide for the requirements of the agricultural population the horses best suited to the soil and the most profitable to breed, but without losing sight of the essential object of the whole organisation, *i.e.*, that horses used in civil life shall be of a type suitable for the supply of the Army's requirements for war."

There is the ideal of French remount activity—to adapt the horse necessary for war purposes to the needs of civil requirements. Thus the actual breeder is brought into first-hand contact with the Remount Department, while the Minister of Agriculture has the advantage in shaping his equine policy on the advice of a joint council of the Horse Breeding Department and Remount officials, which includes, further, the most prominent civilian breeders of horses of various types. I have no knowledge of any such body ever having been in existence in England: rather has there been decentralisation of interests and consequent lack of a cohesive policy. It would seem that in France the system of State-aid for horse-breeding was established as far back as 1639, and continued with only one break to the present day. In 1914 there were six circles (each presided over by an inspector-general), twenty-five directors, and forty-five sub-directors and superintendents, with a corps of attendants of various grades called "Palfreniers."

General Birkbeck explains that within the circles are twenty-five stallion depots containing 3,450 stallions, representing 545 thoroughbreds (Arab, Anglo-Arab, and English), 2,175 half-breds (Anglo-Normans and a few

roadsters), and 730 draught horses (Percherons, Ardennais, and Boulonnais). These depots serve 756 stations. In addition to the 3,500 sires maintained by the State for service at nominal fees, there are three classes of privately-owned stallions standing for public service. A few years ago their number was 8,140, the classes being approved stallions (1,736), authorised stallions, and accepted stallions.

It is shown how the provision of brood mares is not neglected. Nothing in a national sense is done for the brood mare in this country. In France the State gave handsome premiums for mares with foal at foot and for young brood mares which it was desired to devote to the stud. Permanent premiums for a certain number of years were given to the owners of these young mares, conditional on their appearance at subsequent shows a certain number of times with foal at foot by a State stallion.

The methods of the personnel of the Remount Department are sketched, and it is made perfectly clear that it is the business of the State to get into direct touch with breeders and offer every possible assistance in the form of advice and instruction. The only real national stud in France is at Pompadour, where at the time of the Director's visit there were maintained fifty brood mares of pure English thoroughbred, pure Arab, and Anglo-Arab strains. There were also 100 stallions for the surrounding district as well as for the Pompadour mares, but it will interest Irish breeders to know that all French remount officers confessed they could not breed the bone and substance that Ireland produces.

REVENUE.

How is it all done in a financial sense? General Birkbeck replies that the revenue is derived from racing—"from the pari-mutuel or totalisator, which so largely supplants the bookmaker on French racecourses, and which pays a percentage to the State. Racing in France is thus compelled to fulfil its duty to the State, *i.e.*, the improvement of the national breeds of horses." "In short, those responsible for the government of the French Turf seem to pay more regard to the national aspect of racing than do similar authorities in England." I have however, always understood that the State in France took no profit from the pari-mutuel, but through its Minister of Agriculture a license was granted, without charge, to any approved race society that wishes to have the pari-mutuel on its racecourse. The Race Society is allowed to deduct 8 per cent. and to retain 4 per cent. for working expenses; 3 per cent. must be devoted to charities, and 1 per cent. is given in the form of premiums to breeders of winners. General Birkbeck's pointed allusion to the direct connection which existed before the war between racing in France and State horse-breeding seems to bring the time nearer when the pari-mutuel may establish itself on English racecourses. There are more unlikely things than that the war, with the strain it must impose on institutions, may bring about a State recognition of racing such as seemed wholly impossible in those other days of peace.

THE CRUX.

General Birkbeck specially emphasises the fact that the whole remount system in France, is, or was, based upon the direct purchase of horses bred in France, and that prices had been raised £10 in 1913 and 1914. Moreover, horses are paid for at three years of age. Herein lies the real trouble as it affects this country. Hitherto the Government have refused to take animals at three years of age from the breeder, and no matter how many State sires at nominal fees, may be placed at his disposal, he will still be unable to breed horses on a profitable basis unless the War Office will take the three-year-old at the remount price. Changes must be

introduced without delay, or the situation will go from bad to worse.

[The Totalisator has been successfully adopted in the Australian Commonwealth under somewhat similar conditions. Is there any reason, beyond the national fault of "unreadiness," that it should not be adopted in Britain and without delay?—Ed. V. R.]

Veterinary Inspection by the Clydesdale Society.

The arrangement between the Council of the Society and the Council of the Glasgow Agricultural Society regarding the veterinary examination of Clydesdale stallions at the Glasgow Spring Stallion Show of 1915, worked smoothly and pleasantly. On account of the lamented death of Principal McCall, Mr. Andrew Robb, senr., F.R.C.V.S., Glasgow, has been appointed chief inspector and umpire, and Messrs. W. F. Houston, M.R.C.V.S., Paisley (nominated by the Glasgow Society) and W. G. Forbes, M.R.C.V.S., Kilmarnock (nominated by the Society), have been appointed as his colleagues for the show of 1916. The Cawdor Cup for stallions will, as usual, be competed for there. In connection with this subject of veterinary examination of stallions, it may be worthy of remark that the register of the Board of Agriculture for Scotland for 1914-1915 contained the names of no fewer than 441 Clydesdale stallions which had passed the Board's veterinary examination, and were serving mares in Scotland during 1915; while the corresponding register of the Board of Agriculture and Fisheries contained the names of 88 Clydesdale stallions which were serving in England.

Mortality at the Zoo.

There was a considerable reduction last year in the death-rate at the Zoological Gardens. Prof. H. G. Plimmer, in his report of the deaths which had taken place during 1915, presented to a meeting of the Zoological Society last night, said the numbers were:—Mammals, 280; birds, 706; and reptiles, 179—representing respectively 21 per cent., 27 per cent., and 29 per cent. of the total there, including new arrivals during the year. If, however, they took only the figures for the occupants of the Gardens since the beginning of the year, which was the best test, the percentages in the three groups were reduced to 18, 15, and 14. Apart from the new arrivals during the year, the cases of infectious disease had been very few.

Deaths from tuberculosis had decreased very considerably. Among mammals the number had been reduced from 59 last to six, and among birds there was a reduction of 50 per cent. He believed spitting by visitors in the Gardens was the main cause of the disease. If they could prevent overcrowding and have proper quarantine, he saw no reason why the disease should not be stamped out. There had only been two cases in the reptile house. One was that of a crocodile, the first recorded of its kind.

There had been two cases of cancer. One was that of a wolf whose mother had died from cancer, while the son of the wolf which died last year had probably got the disease in the same place—the neck. Many birds had died from fatty degeneration of the liver through overeating. The difficulty in their case was that if they were not fed they died of starvation.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended Feb. 26	15	18			1	6	53	103	5	97	232
Corresponding week in											
1915 ...	14	17			1	2	†	†	5	67	246
1914 ...	18	18	4	27	1	5	70	120	14	64	729
1913 ...	16	17			4	15	59	132	2	35	341
Total for 9 weeks, 1916	117	128	1	24	13	44	787	1993	132	704	2166
Corresponding period in											
1915 ...	155	175			7	11	†	†	107	691	2837
1914 ...	167	180	5	31	19	47	749	1418	116	487	4515
1913 ...	119	133			31	110	748	1636	91	302	3477

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.
Board of Agriculture and Fisheries, Feb. 29, 1916

† Counties affected, animals attacked:—Kent 1, London 4, York, West Riding 1.

IRELAND.	Week ended Feb. 26	...	...	...	...	...	Outbreaks	1	13	5	20
Corresponding Week in											
1915 ...	...	...	...	...	...	...	2	10	6	49	
1914 ...	...	...	...	...	...	...	2	18	5	15	
1913 ...	...	...	...	...	...	...	1	6	1	18	
Total for 9 weeks, 1916	...	1	5	...	...	...	18	142	36	105	
Corresponding period in											
1915 ...	...	...	...	...	...	...	10	131	39	248	
1914 ...	...	...	2	29	...	...	25	218	34	224	
1913 ...	...	...	...	...	...	...	64	167	35	179	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Feb. 28, 1916.
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1444.

MARCH 11, 1916.

VOL. XXVIII.

VETERINARY EXAMINATION IN SCOTLAND.

A note which we published last week shows that no fewer than 441 Clydesdale stallions which had passed the Scottish Board of Agriculture veterinary examination were serving mares in Scotland last year. This, with such additional signs as the uninterrupted continuance of veterinary inspection by the Clydesdale Society, shows that the veterinary examination of stallions in Scotland is now a definitely established practice. Hotly opposed as it was in some quarters at first, a few years' trial appears to have convinced Scottish breeders of its value; and its discontinuance is now most unlikely. It is a remarkable revolution to have been effected in so comparatively short a period, and one which will be of incalculable benefit to Scottish horse-breeding.

POST-MORTEMS IN ARMY PRACTICE.

Some years ago an army veterinary surgeon, speaking at a meeting of civil practitioners, and comparing the respective professional advantages and disadvantages attending their work and his own, summarised them roughly as follows. "We have more control over our patients than you have, but we do not get so many opportunities for post-mortem examination as you do." The latter statement indicates a serious drawback to army veterinary work in peace, but it does not apply in war times.

Under ordinary conditions during peace, it is true that most army veterinary surgeons see comparatively few post-mortem examinations. There is not usually much sickness among the horses of a well-ordered regiment; and few horses are destroyed while in the army. The result is that army post-mortem opportunities generally fall short of those often enjoyed in civil practice. Obviously, a great war alters all this.

In war, in the home and base depots and in the field alike, there is more serious illness among horses than is usually seen in civil life, opportunities for post-mortem examinations are frequent, and very often, though not always, time can be found to utilise them. In this, as in other department of equine practice, our colleagues in the army are now enjoying the chance of a lifetime.

How many of them are utilising it rightly? Very many veterinary surgeons now serving in the army are general practitioners; and we all know that very many general practitioners have never yet made full use of their unrivalled post-mortem facilities. The present is a time for these to establish the rule of "a post-mortem whenever practicable," which they may take back into civil life.

CASE OF "TWIST" WITH UNUSUAL SYMPTOMS.

Subject. My own charger, which I have ridden daily since the beginning of the war.

History. I rode this mare about fifteen miles to visit an outlying unit, returning to my billet about 4.30 p.m. The first half-hour of the journey included a gallop of about a mile, the rest of the ride was done at an ordinary pace. Nothing unusual was noticed about the mare during this ride, and on returning she was handed over to my groom, apparently quite all right.

Symptoms. My attention was drawn to her after she had been in the stable about five minutes. She was then crouching as if preferring to lie down, and was slightly tympanitic. I had her led out into a grass field and walked round. She did not appear to be in much pain, but rapidly became very tympanitic, and this rendered breathing difficult. Pulse hard and fast; temperature 101° F. She then laid down, but did not attempt to roll, and remained in this position about ten minutes.

I made rapid preparations to use a trocar and cannula, but by the time these were ready the tympany seemed to be decreasing, so they were not used. During the next half hour there seemed no improvement; the pulse became much weaker, and later, could hardly be felt at all.

The mucous membranes now became very injected. There was no sweating or rolling, the mare either stood still, or, if she laid down, remained quite quiet, never attempting to roll.

Occasionally she gulped, as if letting up air from the stomach, but there was no attempt to vomit. These symptoms continued until about 10 p.m., when she dropped down dead—about five hours from the time the first symptoms were noticed.

Diagnosis. No definite diagnosis was arrived at. Twist or intussusception thought to be more probable than anything else.

Treatment. Usual treatment for colic. Arecoline and strychnine were also used, without effect on bowel or pulse.

Prognosis. Unfavourable—from the start a fatal termination was expected.

Post-mortem. This, made the following day, revealed a twist in about the middle portion of the small gut. Except at the actual twist there was very little inflammation.

There was also a rupture in the mesentery through which the twist had passed.

I think this case worth recording because the symptoms were unusual—chiefly, the entire absence of any symptom of pain, extreme general tympany, and continual regurgitation.

When did the twist occur? Is it possible that it may have happened during the first three miles, when I galloped the mare, and that she completed the journey without showing any symptom?

A V.O. IN FRANCE.

SULPHUR POISONING.

I was asked to see some horses that were thought to have been poisoned. The following is a brief account.

Eleven animals were found to be suffering from abdominal pain; two had already died previous to my arrival. All these animals were in one stable, and were suffering from mange; most of them appeared to have suffered more from injudicious application of various remedies applied to skin; they were all generally in poor condition. The pain did not appear to be very acute, there was a paddling of the hind legs, constant looking round to both flanks, animals would lie down quietly for a short time. The temperature of all animals was taken but showed no uniformity: several were 104°, others 101°, 102°. Blanched mucous membranes. One animal died whilst I was in attendance; this animal lay down, became comatose, and died without struggling. They had all been dressed the day previous with gas fluid, which gave a most obnoxious smell to the whole stable, and which at first I was rather inclined to suggest was the cause of the trouble. The only other drug that had been used was said to be a handful to each animal of salts and sulphur. Several of the animals the next day had a very offensive diarrhoea, which smelt strongly of sulphuretted hydrogen.

Two more animals died the same day, and the post-mortem observations were as follows. There was a strong smell of sulphuretted hydrogen from the carcass; the bowels appeared blanched externally. A severe gastro-enteritis, the caecum particularly being affected, mucous membrane was denuded in parts; contents of large intestine liquid; heart and lungs showing ecchymoses. One examination of contents of caecum a large amount of what appeared to be sulphur was found, and a small amount of contents of caecum placed in a bottle and allowed to stand showed a sediment of sulphur; a piece of paper soaked in lead acetate turned grey when placed on outside of bowel.

Two stomachs were sent to Prof. Lander at the Royal Veterinary College, who estimated the amount of sulphur in one stomach at 8 oz., and in the other 30 oz.

Treatment. Animals were all rugged up and bandaged; friction to skin. Stimulants—whiskey, liq. strych., linseed gruel. None of the animals refused food until shortly before death. Most of these animals had a temperature of 104 to 105 shortly before death, the temperature soon became normal after the disappearance of the pain. Altogether 13 animals were affected, 7 of which died.

On further inquiry it was discovered that about 7 lb. of sulphur was missing from a bag; this had

evidently been given indiscriminately by a stableman on the previous day in hopes of curing the mange; it was given at midday, and the animals were found with colic early the following morning.

H. D. JONES, M.R.C.V.S.

ABSTRACTS FROM FOREIGN JOURNALS.

HORSE SERUM IN THE TREATMENT OF THE WOUNDS OF WAR.

R. Petit has published an article upon this subject (*Rivista Medica*). It is known that the normal serum of the horse manifests a beneficial cicatrising action. The author has found horse serum exceedingly useful in dealing with grave complications (gangrenous processes, secondary hæmorrhages, and slowness of the processes of repair) of the wounds met with in the war.

The author recommends the following procedure. A simple sterile compress is used, which, in those cases in which the tissue is very fine and loose in texture only, may be employed in two folds, but not more. The serum is poured under aseptic precautions into a sterilised plate, and the compress is wetted with it. The compress is then taken with sterilised forceps and placed upon the wound so as to wholly cover it—that is, the compress should be in contact not only with the circumference of the wound, but also with all its anfractuosities.

The author discusses the mode of action of horse serum. According to him, the use of the serum is a biological method of treating septic wounds, influencing the natural defensive powers of the organism, and strongly increasing them. The serum contains substances or ferments capable of destroying infective microbic agents. In addition, when applied upon infected regions, it increases leucocytosis and provokes a greater flow of polynucleated leucocytes.

The serum used by the author is normal horse serum in the liquid condition. For use upon human beings, it is advisable to heat it to 56° C., and thus avoid the toxic actions which any heterogeneous serum may possess and which might cause anaphylactic accidents.

In addition to its enormous attractive power for polynucleated leucocytes, the serum exercises a potent hæmostatic action upon the regions to which it is applied. It also constitutes an essentially favourable medium for the life and reproduction of the anatomical elements of the parts. When in contact with the serum, wounds granulate rapidly; they become red, and cell division is strongly encouraged.

In order that the treatment should exercise its full efficiency, it is indispensable that all the recesses and the least anfractuosities of the wound should come into contact with it. The surgeon should do all that is necessary, in the way of incisions, etc., to attain this end.—(*La Clinica Veterinaria*).

RECURRENT URTICARIA IN A HORSE.

F. Müller, of Lillianthal, has recorded the following case, which he observed one summer, at the beginning of August.

The subject was a horse, suffering from a pronounced urticarial eruption. The back and flanks were covered with lumps ranging from the size of a millet seed to that of a hazel nut. On the parts where the skin was softer, such as the abdomen, inside of the limbs, sheath, anus, ears, nose, eyes, and lips, some of the lumps attained the size of a man's fist. The animal's head was deformed, being broader below than above, somewhat like that of a hippopotamus. A deep depression marked the place where the halter passed round the front of the nose.

Müller gave the horse an aloes ball, and ordered repeated complete washings of the body with Burow's solution. On the third day the lumps had almost disappeared, and the head had resumed its normal aspect. Soon, however, the lumps reappeared, although none now exceeded the size of a hazel nut. The disease now came and went, improvements alternating with exacerbations. This state of things went on for about five weeks; and the horse could only be used for very little work.

Müller now changed the oats which the horse had been receiving before and during his illness. Newly bought and different oats were given; and a powder of 5 grammes (= about 75 grains) of calomel was given daily for four days. This brought about a final improvement, which was permanent.

Müller attributes both the origin of the urticaria and its recurrence to the oats that had been used. —(*Berliner Tier. Woch.*)

W. R. C.

The function of the Pituitary Body.

At one of the Hunterian lectures delivered recently at the Royal College of Surgeons of England, Prof. W. Blair Bell dealt with experimental operations on the pituitary body in animals, basing his conclusions on his own extensive experimental work. The first extirpation of the pituitary body was performed in 1886 by Sir Victor Horsley, and the matter was carried to a further stage by Paulesco and Harvey Cushing.

The results reached by the two latter experimenters were briefly these—Removal of the whole of the pituitary body or of its anterior lobe causes death in a short time. Partial removal of the anterior lobe produces the condition known as dystrophia adiposo-genitalis. Removal of the posterior lobe gives rise to no symptoms. Prof. Blair Bell's experience covered 27 operations on dogs, of which only one died as the result of the operative interference, contrasting favourably in this respect with preceding instances. With the technique adopted the operation only occupied about half an hour, and in every case the animal recovered sufficiently in two hours to drink milk and was able to eat meat on the following day. The control animals in which, with the same operative interference, the pituitary body was not removed, lived for many months.

Prof. Blair Bell's conclusions confirmed those of his predecessors with one very important exception. He also finds that complete removal of the whole body or

of the anterior lobe is always fatal. The dog recovers from the operation, but remains in a state of somnolence from which it can be roused for about 24 hours, when breathing gradually becomes slower and stops. Incomplete removal of the anterior lobe insufficient to give rise to fatal coma results in a condition of genital atrophy. The Graafian follicles die, the interstitial cells of the ovary disappear, the muscle of the uterus atrophies, and the glands drop out. Paulesco and Cushing described the same condition without illustrating it. Prof. Blair Bell demonstrated on the screen comparative sections of uterus and ovary before and after the removal, the before specimens having been obtained from the same animal at a preliminary operation. So far he was in agreement with others. Cushing, however, went on to state that partial removal of the anterior lobe gave rise to the condition of dystrophia. Prof. Blair Bell had never seen this result from any removal of pituitary substance, but observed it as a constant sequel of complete separation of the pituitary body from the brain by crushing or section. One animal increased 66 per cent. in weight in 50 days, and its uterus and ovary were found completely atrophied, while the thyroid vesicles were distended with colloid.

Finally, removal of the posterior lobe produced no symptoms whatsoever. The health of the animal remained unimpaired, and the ovary and uterus were normal, and continued to develop in the young animal. A further series of experiments illustrated the effect of the pressure of a tumour on the pituitary body. The tumour in this case was a ball of wax impregnated with barium salt so as to be visible on the X-ray plate. Where this local pressure is successfully applied the animal wastes, becomes irritable, and develops glycosuria without other evidence of pressure on the brain. Cushing recognised a definite type of cachexia, but Prof. Blair Bell found a condition typical in general of a dog suffering from a wasting disease. In the light of his own observations the lecturer had been led to regard the function of the pituitary body as that of the organ as a whole; the secretory material comes from the intermediary cells which are themselves derived from the anterior lobe, and these cells and their products invade the posterior lobe, or pars nervosa, when the gland is active. The lecture was copiously illustrated by convincing lantern slides.

PARLIAMENTARY.

In the House of Commons, on Wednesday, March 1st

COLONEL HALL WALKER'S GIFT.

On the supplementary estimate of £50,600 for the Board of Agriculture.

Mr. Acland explained that the Vote was connected with the purchase of Col. Hall Walker's stud. Last October the member for Widnes offered to sell two properties—one at Tully, county Kildare, and the other at Russley Park, ten miles south-east of Swindon—and to make the Government a present of the horses they contained—two stallions, thirty brood mares, ten yearling fillies, twenty foals, and eight horses in training, together with cattle, fodder, utensils, and furniture, so that the Government might be in possession of a first-class breeding establishment for horses. The gift was accepted principally on military grounds. During the war it would be managed by the Board of Agriculture.

The properties, apart from the horses, had been valued by Mr. Trustram Eves at £65,625; while the horses had been valued by Capt. Greer, senior Steward of the Jockey Club, at £74,000, that being held to

be their value before the war. He was informed that the stud included two stallions which Capt. Greer valued at £10,000 and £15,000 respectively, and among the mares were several animals worth £1,000 each. Capt. Greer had undertaken to act as director of the stud, without remuneration, during the war. It was not, however, possible at the present time to run any breeding establishment at a profit. Arrangements had to be made whereby some of the horses could be tested on racecourses. That would be done by leasing them, and seven of the two-year-olds had been leased to Lord Lonsdale on condition that he paid the expenses of their training and racing and handed to the Government half of what they might win, after paying expenses. (Laughter.)

Mr. R. McNeill: Will they run in Lord Lonsdale's colours or the Prime Minister's.

Mr. Acland replied that they would carry Lord Lonsdale's colours; but there was a very small chance of winning big races in these times. It was intended gradually to transform the existing stud into one primarily fit for the production of Army horses. (Hear, hear.)

A NATIONAL STUD.

It had been found absolutely necessary that this country should start, as every Continental country had started, a system for breeding horses which the Army needed. This gift would take the country a long way on that path, and make the arrangements much easier. He believed that some persons might object. Personally he regarded racing as a very low form of sport. (Cries of "Oh!") Sport ought to combine physical skill with some element of danger and uncertainty. Skill and danger were exercised purely vicariously with horse-racing. With regard to racing, from the point of view of betting, he did not think it could be regarded as a sport at all—it was something entirely useless to the country from every point of view.

But if they were to have a Government stud of thoroughbred horses, they must be trained and tried as race horses, so that their stamina might be tested. By some way the Government must connect itself with racing. (Hear, hear.) The possession of this stud was not intended to interfere with the Government horse-breeding scheme already established in Ireland.

Sir F. Cawley (R., Prestwich), objected strongly to a transaction into which the Government had been bounced by Mr. Chaplin.

Sir T. Esmonde (N., Wexford, N.) thought the establishment of this stud in Ireland was an excellent step, and he would be very glad to see other owners actuated by the same liberal spirit as actuated Col. Hall Walker. (Hear, hear.)

Mr. Burdett-Coutts (U., Westminster), as a breeder of horses for thirty years, was of opinion that it would take many years to breed from these high-class thoroughbreds the class of good light draft horses that would be useful to the country.

Mr. Butcher (U., York), congratulated the Government on having made a most admirable bargain for the nation. He was not in the least shocked at the idea of the Government receiving stakes which were fairly won at one of the most honourable sports we had in this country.

Mr. Hogge (R., Edinburgh, E.) contended that the House should have been consulted at an earlier date about the conditions of acceptance of the offer. A large proportion of the stud were racehorses, and the present system of racing did not produce horses of stamina. (Cries of "No.") The average race in this country was four furlongs and under. (Cries of "No.")

Mr. McNeill (U., St. Augustine's): Does my hon. friend know the age of horses which run at that short distance?

Mr. Hogge: Yes. They are two-year-olds, and as wise at their sport as we are at ours. (Laughter.) He moved to reduce the vote by £100.

Mr. Acland, replying to the questions raised in the discussion, said that the Government had reason to believe that if the generous gift had not been accepted by them many of the valuable horses would have been exported after sale. The War Office, when they were freer, would take control of the stud, as they knew best the kind of horses they wanted. The arrangement for leasing horses to Lord Lonsdale was only for one year.

The amendment was negatived, and the vote was agreed to.

FOOT-AND-MOUTH DISEASE.

In the House of Commons.

Mr. Acland (in reply to a question by Mr. Pollock concerning the restrictions affecting parts of Warwickshire, Oxfordshire, Gloucestershire, Worcestershire, and Northamptonshire, imposed by the Board's recent Order.) The restrictions in question were on the 14th inst. imposed as a matter of precaution, it having been ascertained that certain calves which had been removed from the premises near Wells, Somerset, shortly before foot-and-mouth disease had been found to exist thereon, had been disposed of by a cattle dealer who trades both at Banbury and at Stratford-on-Avon, and that the dealer had on his home premises near Kington, Warwickshire two calves exhibiting symptoms suspicious of that disease. By the 22nd inst. the veterinary officers of the Board had become satisfied that none of the calves under suspicion were affected with foot-and-mouth disease, and the restrictions were accordingly removed. It will, I think, be generally admitted that the circumstances justified the action taken, notwithstanding the local inconvenience which it inevitably entailed. I am glad to be in a position to inform the House that there has been no outbreak of the disease other than that on the premises near Wells.

Prosecution by the R.C.V.S.

At the Keighley Borough Police Court, on Tuesday, Feb. 29th, before the Mayor, presiding, Mr. S. Paget, and Mr. R. Edmondson,

Charles Aspinall, of Greenhouse Farm, Keighley, was summoned by the Royal College of Veterinary Surgeons for having used the title of veterinary surgeon while not registered.

Mr. H. Laycock pointed out that the penalty was £20. For some considerable time past the defendant had advertised himself as a veterinary surgeon, both in a local newspaper and on cards. On November 16 last he was engaged to break in a foal, and on his receipt for the 10s. paid, the signature was "Charles Aspinall, v.s."

Mr. Joseph Harrison, who had come under subpoena, and said he gave his evidence very much against his wish, spoke to the engagement of the defendant and to the business card which the defendant left on his desk.

Mr. Laycock said that on the previous day the defendant called upon him and admitted that he had advertised himself as qualified although he was not.

The defendant, who said he would leave himself entirely in the hands of the Bench, was fined 10s. and costs.—*The Keighley News*.

[“ War time ” fine?]

An inquest was held at Lewes on 4th inst. on Albert Crowhurst, the last of the old-fashioned dip candle makers in Sussex. He had been employed by Messrs. J. Broad & Sons for fifty years, that firm keeping up the manufacture for old association's sake.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders† (including Farcy)		Parasitic Mange.		Sheep Scab.	Swine Fever.	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Out-breaks.	Slaugh-tered.
IRELAND. Week ended Feb. 19	...	...	...	...	...	...	Outbreaks 3		11	6	13
Corresponding Week in {	1914 ...	...	...	...	...	...	...	...	13	7	16
	1913 ...	...	...	...	...	...	...	...	20	2	21
	1912 ...	...	...	...	...	...	...	...	26	...	4
Total for 8 weeks, 1915	...	1	5	...	...	...	...	17	130	31	85
Corresponding period in {	1914 ...	...	...	...	...	...	8	...	121	33	199
	1913 ...	...	...	2	28	...	23	...	200	29	209
	1912 ...	1	1	...	...	...	63	...	161	34	161

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Feb. 21, 1916
 Note.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds:—

Mr. G. Mayall, Bolton	£1	1	0
Capt. J. Scott Bowden, Whitehaven	1	1	0
Mr. F. G. Edwards, Chester	1	1	0
Mr. P. Snaith, Bishop Auckland	1	1	0
Mr. W. L. Cockburn, Liverpool	1	1	0
Mr. R. Moore, Treorchy, Glam.	1	1	0
Mr. H. Kidd, Exmouth	1	1	0
Capt. H. E. Irwin	2	2	0
Mr. H. J. Dawes	1	1	0
Amount previously acknowledged	29	8	0
	£39	18	0

CORRESPONDENCE.

MOTOR CAR LICENCES.

Dear Sir,—May I point out the extreme importance of the Council of the R.C.V.S., and every member of the same, doing all in their power to secure the half-rate on our motor licenses? The coming Budget is likely to increase them to such an extent as to make running a car prohibitive. If we let grass grow under our feet, the new concessions, which are sure to be given to doctors, will be most certainly withheld from us, and many of us will have to lay our machines up. Let us insist that we be treated as our brother medicos, and not slighted by County Council clerks, as we are at present.

Now is the time to act; let us all write to our Council and to our local M.P.s. Numbers and unity are very useful in such questions. It will be far easier to get our rights now than when the extra duty becomes law. If our Council had acted with ordinary foresight we should now be enjoying all the privileges of the sister profession.

Remember the golden rule: "A stitch in time saves nine."—Yours faithfully,

WM. WALKER, M.R.C.V.S.

Brouncy, Hereford Road,
Harrogate, March 8th.

[The matter is governed by the recently amended Finance Act: not even C.C. clerks have power to override that. The issue must be fought in the House of Commons.]

OBITUARY

FRANK FREDERICK MAJOR, M.R.C.V.S., 19, Stourcliffe Street, Edgware Road, London, W.
 Graduated, Edin: April, 1880.
 Mr. Major died on February 27th, aged 60.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, Mar. 2.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieuts. to be temp. Capts.:—G. S. Thornewill (Feb. 18); R. W. MacDonald, A. R. Younie (Feb. 19); J. Buie, G. P. Hayter, A. E. Bailey (Feb. 20).

Mar. 3.

To be temp. Lieut.:—R. S. Pethick (Feb. 21).

Mar. 4.

Temp. Lieut. to be temp. Capt.:—W. H. Blanchard (Feb. 24).

Mar. 6.

Temp. Lieut. T. V. Simpson relinquishes his commn. on termination of engagement (Feb. 27).
 To be temp. Lieut.:—B. McMahon (Feb. 22).

Mar. 7.

The dates of promotion of the following Lieuts. to be Capts. are as now stated, and not as in *Gazette* of Feb. 1:—P. S. Sparling (Sept. 19); R. Chown (Sept. 22).
 To be temp. Lieut.:—J. Lawther (Feb. 23).

Mar. 8.

Temp. Lieut. to be temp. Capt.:—T. B. Bindloss (Jan. 21).

To be temp. Lieut.:—S. E. Boulter (Feb. 25).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Mar. 4.

The dates of promotion of the following Capts. are as stated against their names, and not as announced in *Gazette* of Feb. 26:—G. W. Bloxome (Aug. 5); H. H. Lord (Aug. 6); F. B. Ditmas (Aug. 7); J. Facer, W. Aitkin (Aug. 8); P. S. Thierry (Aug. 9); A. H. Adams, J. R. Crane (Aug. 19); J. Sheffield, F. Hopkin, H. C. Taylor (Aug. 20); D. H. Rylands, J. A. G. Gosling, J. Southall (Aug. 22); C. Taylor (Aug. 25); L. A. F. Daw-

son (Aug. 26); H. Sumner, H. McD. Paul (Aug. 29); W. T. Oliver (Aug. 30); A. J. Beckett (Aug. 31); J. C. Gaunt (Sept. 1); J. Cameron (Sept. 3); R. J. Sargent, C. W. Townsend, R. L. Armour, H. Newton, B. J. Rees, A. Mackenzie (Sept. 5); B. H. Benson (Sept. 6); F. B. Greer (Sept. 9); G. G. Sooby, G. M. Vincent, W. F. Wilson (Sept. 12); R. Bryden (Sept. 14); A. S. Chisholm, R. C. Matthews (Sept. 19); A. H. Watson (Sept. 22); J. Cunningham, C. Holland (Sept. 23); W. K. Townson (Sept. 25); E. E. C. MacLachlan, J. W. H. D. Sarjeant (Sept. 30); J. Donaldson, J. F. Player (Oct. 1); T. S. Green (Oct. 2); W. F. Garside (Oct. 3); H. D. Sparrow (Oct. 5); J. F. Taylor (Oct. 7); A. H. Leyland, J. C. Storie, W. L. Sheffield (Oct. 10); F. Bradley (Oct. 17); J. G. Deans (Oct. 18); J. M. McMaster (Oct. 24); R. W. Clarke (Oct. 27); J. A. Craft (Oct. 29); W. H. Brown (Nov. 1); R. Simpson, T. Craig (Nov. 6); E. J. Laine (Nov. 12); J. R. Green (Nov. 15); S. G. Howard (Nov. 19); J. Bell (Nov. 21); G. O. Ogden (Nov. 27); E. R. H. Woodcock (Nov. 28); F. J. Richmond (Nov. 30); G. C. Robertson, V. S. M. Cope (Dec. 23); W. P. S. Edwards (Jan. 1); H. A. Thorne (Jan. 2); W. G. Darling (Jan. 5); J. Daly (Jan. 13); D. Keir, G. Atkinson (Jan. 20); R. A. Edwards (Jan. 22); J. Spruell (Feb. 2); J. Martin (Feb. 10); C. E. W. Bryan (Feb. 11); J. P. Heath, E. F. Angler (Feb. 13); A. C. Burton (Feb. 27).

Mar. 6.

Lieut. W. Wordley is removed from the T.F. for absence without leave (March 7).

Mar. 7.

Capt. S. J. Williams to be Asst. Dir. of Vet. Services, and granted temp. rank of Major whilst so employed (Feb. 1).

Capt. J. E. L. Still to be Asst. Dir. of Vet. Services, and granted temp. rank of Major whilst so employed (Feb. 14).

Death reported from Oversea:—Cpt. W. J. Jones, 5633

The A.V.C. Comforts Fund.

Dear Sir,—I have pleasure in forwarding further lists of subscriptions and gifts of warm garments, etc., received, which I trust you will be able to find space for in this week's issue of *The Veterinary Record*.

I also enclose one or two extracts from letters recently received, which will shew how greatly appreciated the comforts have been by our men on active service during the recent severe weather.—Yours truly,

ADELAIDE M. MOORE.

Strathyre, Parsifal Road,
Hampstead, N.W.

March 1916.

Further Contributions received to March 8th:—

	£	s.	d.
Per Major H. Kirby, proceeds Sergeants' Mess Whist Drive	1	10	0
Major P. J. Harris, A.V.C.	2	0	0
per Col. Queripel (from Capt. A. R. Routledge, A.V.C., T.F.; proceeds Concert), Huntingdon	3	3	0
per Mrs. Rutherford, Anonymous	10	0	
Miss Harper, Nonington, collected	1	0	0
per Col. Queripel (from Capt. A. R. Routledge, A.V.C., T.F.; proceeds Boxing Tournament), Huntingdon	4	0	0
From Mr. J. W. Procter, M.R.C.V.S., Romford	10	6	
Mr. M. G. Byerley, F.R.C.V.S., Greenwich	1	1	0
Mr. George H. Gibbings, Tavistock	10	6	
per Mrs. Shipley: Miss Duff, Miss B. Harrison	15	0	

Mr. F. Henson Gibbings, Nottingham	2	2	0
Mr. William Roots	2	2	0
Lieut.-Col. R. L. Cranford, A.V.S.	2	10	0
Mr. J. McKinna, Huddersfield	1	1	0
Mrs. G. A. Banham, Cambridge	1	10	0

£24 5 0

per Lieut.-Col. F. C. Stratton, A.V.S., Edinburgh, collected 88 11 7

Further Parcels received to March 8th.

Parcel—postmark "Newington," No name; 17 prs. socks, 2 mufflers, 3 helmets, 3 prs. mittens.
Mrs. John Blakeway: mittens.
St. Alban's Working Party (1st parcel): shirts, mufflers. (2nd parcel): mufflers, mittens, magazines, etc.
Newbiggin-by-the-Sea Working Party—per Mrs. Kellett: Socks, mufflers, caps, mittens.
Miss Hinxman: Mittens. Mrs. Bolton: Socks.
Mrs. Robson (Laurencekirk): Socks, mufflers.
Mrs. J. Blakeway (2nd parcel): Socks, mittens, muffler.
Mr. G. R. Edwards, F.R.C.V.S.: Socks.
Miss Henderson: Socks.
Mrs. Barber (Brewood): Mufflers, helmets, mittens, socks.
Mr. Charles Sheather, F.R.C.V.S.: Socks.
Mrs. Leckie: Shirts, socks, mittens, gloves, mufflers.
per Mr. W. Moore (the Misses Boag, Miss Trigg, Miss Cook, Miss Mason): Muffler, cuffs, mittens, socks.
per Mrs. Ware (from Mr. F. Ware, C.V.D., India, 2nd parcel): Flannel shirts, mufflers, helmets, socks, belts.
Miss Macgregor (Ayr): Socks.
per Mrs. Moscrop: Socks, mufflers.
Mrs. Abson: Mittens.
per Mrs. Rutherford: Mrs. K. Lees, and Mrs. Fowler, 14 prs. Socks.
Mrs. F. Hibbard (Bexley): 1st parcel—Mittens, helmet, muffler, socks; 2nd parcel—Helmets.
Mrs. Davenport: Gloves.
per Miss Queripel: Mrs. G. Barrett (Romford), Parcel.
Mrs. Fearnside: Socks, mittens.
Mrs. Baird (Edinburgh): 50 prs. Socks.
Mrs. Dunkin (Canterbury): Mittens, socks, mufflers, waistcoat.
per Mrs. Collins: President and Members St. Rollox Women's Unionist Association (Glasgow), 11 prs. Socks.

Extracts from letters received.

Very many thanks for the bale of comforts received for the N.C.Os. and men of this Hospital (No. 19). They were very much appreciated, and arrived just in time to be distributed before the severe snowstorm which we have just had. I further wish to acknowledge the receipt and to thank you for a box of books, stationery, etc., which has also arrived.

Many thanks, indeed, for the comforts which arrived here all correct. We are having a spell of cold windy weather, and the men were very keen on getting the mufflers, mittens, etc. The unfavoured, I am sure, would very much appreciate such articles if you could arrange to send further supplies. We are in a very bleak spot, and seem to get all the rain, wind and cold there is about.

Again, thanking you and your kind helpers on behalf of the men.

On behalf of my section, I beg to offer you and all our kind lady friends our sincere appreciation for all your kindness and gifts to us. I receive the roll of

weekly papers regularly, and we all enjoy them—particularly as we happen to be at present a long distance from any town.

I must express to you the thanks of the N.C.Os. and men of this section for the articles—socks, mufflers, gloves, mittens, etc., just received. It has been a pleasure to distribute these, and note the appreciation with which they were received.

I once more beg to acknowledge receipt of parcels of comforts from you. This will perhaps be the last time I can express the thanks of this section, as I am taking over another unit shortly. If the new C.O. is treated only half as generously as you have treated me, he will have no cause for complaint, and he will certainly be unable to be more grateful than myself for all the comforts sent to the men in my care.

I wish to thank very much all the kind people who subscribe to the Army Veterinary Corps Comfort Fund. The men are delighted with their presents, which are, in my opinion, exactly what they require.

Collected by *Lieut.-Col. F. C. Stratton, A.D.V.S.,*
Scottish Command.

	£	s.	d.
J. Aitken, Junr., Dalkeith	1	1	0
W. Anderson, Keith	1	0	0
J. Andrew, Paisley	3	3	0
J. Baird, Dumfries	1	1	0
Wm. Bannatyne, Haddington	1	1	0
P. Bell, Falkirk	2	2	0
J. Beattie, Longside	10	6	
Lieut. N. Brear, A.V.C.	2	2	0
Jas. Borthwick, Kirkliston	1	1	0
D. Brown, Kilwinning	1	1	0
J. Brown (F), Invergordon	1	0	0
Capt. C. R. Chadwick, A.V.C., T.F., Stirling	1	1	0
D. Clark, Kincardine	10	6	
R. H. Connochie, St. Boswell's	1	1	0
T. D. Connochie, Galashiels	10	6	
J. M. Cuthbert, Dalbeattie	10	0	0
T. A. Douglas, Kilmarnock	2	2	0
Mrs. J. A. Fearnside, Ballachulish	1	0	0
Mrs. W. M. Ferguson, Dundee	10	6	
W. G. Forbes, Kilmarnock	2	2	0
Geo. Gair, Conon Bridge, Ross-shire	10	6	
J. Gibson, Dundee	10	6	
T. Gilchrist, Wishaw	10	0	0
H. Gillmor, Ayr	2	2	0
Lieut. A. Gofton, A.V.C.	2	2	0
Capt. D. Hamilton, A.V.C., T.F., Hamilton	3	3	0
Jas. Henderson, Edinburgh	5	0	0
Lieut. W. Hepburn, A.V.C., T.F. (R.) Aberdeen	1	1	0
Lieut. J. W. Hopkin, A.V.C., T.F.	1	1	0
W. F. Houston, Paisley	2	2	0
And. Hume, Haddington	1	1	0
Major E. D. Johnson, A.V.C., T.F.	1	1	0
J. Ker, Peebles	10	6	
J. Lindsay, Dumfries	1	1	0
A. I. McCallum, J.P., Edinburgh	1	1	0
J. McDougall, Helensburgh	10	6	
A. H. McDougall, Glasgow	10	0	0
D. McFarlane, Doune	2	2	0
Lieut. J. D. McGregor, A.V.C., T.F.	1	0	0
Lieut. J. G. McGregor, A.V.C., T.F., Greenock	1	1	0
Capt. W. A. McGregor, A.V.C., T.F., Ayr	1	1	0
L. McLaren, Brechin	1	1	0
Lieut. D. G. McLeod, A.V.C., T.F., Rutherglen	1	0	0
Wm. Moodie, Rothesay	10	0	0
Thos. Menzies, Greenock	1	1	0
Lieut.-Col. G. A. A. Oliver, A.V.D.	2	0	0

A. Panton, Blair Atholl	15	0
And. Pender, Lockerbie	1	0
J. D. Pottie, Greenock	10	6
J. G. Reynard, Perth	1	1
J. N. Reynard, Manuel	5	5
Wm. Robb (F.), Glasgow	1	1
S. Robson, Edinburgh	1	0
Wm. Robertson, Kirkintilloch	10	0
J. B. Russell, Forres	10	6
Lieut. J. H. D. Sarjeant, A.V.C., T.F., Edin.	10	6
R. Scott, Hawick	1	1
Wm. Skinner, Oldmeldrum	1	1
Lieut. J. Sommerville, A.V.C., T.F., Glasgow	1	1
Lieut. J. F. Taylor, A.V.C., T.F.	10	0
J. Taylor, Edinburgh	1	1
Lieut. D. Weir, A.V.C., T.F., Ayr	1	1
Mrs. D. Weir, Ayr	3	15
Major A. Wilson, A.V.C., T.F., Edinburgh	1	1
P. Wilson, Lanark	10	0
H. W. Robson, Laurencekirk	1	1
A. S. Wallace, Arbroath	10	6
pro A. Gofton (F.), Edinburgh	6	7
N.C.Os. and Men, Station V. Hosp., Stirling	8	0
Lieut. J. F. Macintyre, A.V.C., T.F., Glasgow	1	1

£88 11 7

Alleged unsound meat at Lewisham: conflicting evidence—Dismissed.

After two postponements the case of the meat supplied to the Military Hospital at Lewisham came on at the Greenwich Police-court. Mr. Symmons, the magistrate, sat specially in one of the courts.

Mr. Alfred Knight, butcher, of 74 Springbank Road, Lewisham, was summoned at the instance of the Borough Council of Lewisham in respect to two legs of mutton and a piece of beef supplied under a contract to the Lewisham Military Hospital, which were alleged to be unsound and unfit for food. For the prosecution, Mr. A. H. Poyser, whilst Mr. H. A. Woodhouse and Mr. Ricketts were for the defendants, together instructed by the Incorporated Society of London Meat Trades.

Mr. Poyser, for the prosecution, said there were two charges in respect of meat delivered on the same day, December 8th, under section 47 of the Public Health Act, 1891. Mr. Knight seemed to think he was being charged with intentionally and deliberately forcing unsound meat on the hospital authorities, but this was not at all the case, the simple issue being concerned with the supply of meat held to be unsound. The summonses were issued under the Public Health Act, which under section 47, did not require that there should be anything "intentional," but insisted that butchers and contractors should regard themselves as being in a position in which they must protect the public by their vigilance.

For convenience, first consideration was given to the two legs of mutton.

Mr. John Alfred Kempster Cooper, the sanitary inspector of Lewisham, said he went to the Military Hospital on December 8th, at 10.15 in the morning. His attention was called to the meat, which had recently been delivered. He saw two legs of mutton, weighing about 16 lb. The mutton was sodden. The exposed muscle was of a dirty grey colour. The connective tissues had been washed out, probably owing to bad defrosting. The muscle was in a state of putrefaction. The meat was quite unsound and unfit for food, in his opinion. He held certificates as to meat inspection, and was therefore qualified to pass judgment on the

condition of the meat. He informed the medical officer of health and also called the contractor's man who admitted having delivered the meat, and witness advised him to fetch Mr. Knight. Subsequently, the meat was taken before the magistrate and condemned.

Although re-examined very closely for a considerable time, witness maintained that the meat was bad and unfit.

The Bench: Have you seized meat before?—No. I have been called in to condemn meat on many occasions when butchers notify the Council.

For how long?—Nearly 14 years in Lewisham.

Would you say this was a bad, mild, or an average case in your experience?—It is not an outrageous case. It is perhaps a case about the average.

Do you think it consistent that the mutton might have the day before you saw it been good?—Yes, it might have been wholesome then.

Mr. W. J. Monk, acting quartermaster at the Military Hospital, said the mutton smelt offensive. It was very wet and discoloured. He was present when the medical officer of health examined it. He could not say whether a skewer was stuck in the meat.

By Mr. Woodhouse: He would not have accepted the meat himself. He thought the condition was due more or less to the weather. He did not wipe it, though wiping, of course, would remove the wet.

Does not the smell, which is entirely superficial, go after wiping?—Yes, in most cases.

The Bench: How long have you been at this job?—Fourteen years.

Have you always been examining meat supplies?—Yes.

As to the smell: there is a smell sometimes, though meat may be wholesome?—Yes.

Adjutant James, of the R.A.M.C., said it was amongst his duties to examine the meat. The mutton was bad. It had a dirty-grey colour and was very offensive and slimy. It was absolutely unfit for food.

Mr. Woodhouse: What experience have you had of meat inspection?—I have been inspecting meat at the hospital since June 1st.

Did you look into the meat?—No, I did not cut it.

Do you know another portion of the consignment was rejected one day and accepted the next?—No, I know nothing about that.

You rejected seven legs of mutton that morning?—Not myself.

Did you see the seven rejected legs?—Yes. They were offensive.

But do you know they came back and were consumed the next day?—I do not know that.

Lieut. Jones said he inspected the mutton. There were several legs. The two in question were dirty, wet, slimy, smelly, and, in his opinion, unfit for food.

Cross-examined: He had had a good experience of frozen meat, and the supplies sent to the hospital were always fairly good.

Major E. S. Toogood, M.R.C.S., who holds the Diploma of Public Health, and is in charge of the Military Hospital, stated that he saw the meat and agreed that it was bad—dirty, wet, slimy, and smelt offensively. It was unfit for the food of any man. They had to be especially careful, of course, but this meat was not good for anybody to eat.

Cross-examined: Before the war he was the doctor at the infirmary, and had had 30 years' experience. On the same day he rejected seven legs which were received the next day. The contractor said it was due to climatic conditions.

The mutton contract requires that the mutton must be de-frosted!—Yes.

It must be sent soft?—Yes.

Mr. Woodhouse: What of those two legs?—I had no hesitation in declaring them to be unsound.

The Bench: Why do you say meat that the man in the street would call bad is "unfit"?—Because it could cause injurious symptoms. Some people, of course, might be able to eat bad meat without any ill-effects.

Dr. Harris, the medical officer of health and public analyst for Lewisham, had had considerable experience in the inspection of meat, and was one of the examiners of the Sanitary Institute—as was Prof. Wooldridge: This mutton was unsound, as any ordinary housewife would instantly have seen. The mutton was badly de-frosted, which would produce a condition rendering it liable to putrefaction. Great care was necessary in the de-frosting process. The muscle was abnormal in colour and indicative of putrefaction. The odour and appearance in themselves were sufficient, without any probing, to warrant the seizure.

The Bench: Could this be regarded merely as "high"?—No. It had gone beyond that stage.

It ought not to be packed?—No, but should be kept hung.

Mr. Woodhouse: Would cooking remove the injurious effects?—No. It would not destroy the toxin produced by the bacteria. Some people, by reason of personal idiosyncrasy, might eat such meat and not be harmed. This is a clear case in which the meat was unfit. It was not necessary to cut into it even.

Cross-examined: In the last year he had not condemned any meat except this, and during the last fifteen years none.

Excepting yourself, can you say who is more competent than Prof. Wooldridge to say whether meat is good or bad?—He is certainly the most competent authority.

When the military called you in to see the meat did you remark that you were between the devil and the deep sea?—I might have said something of the sort.

The Bench: You thought that to show your patriotism you ought to condemn the meat! (Loud laughter).

Re-examined: How do you account for the difference in your view and that of Mr. Knight's expert?—I cannot, except that the meat had been put into cold store before Prof. Wooldridge saw it.

Mr. Woodhouse: But even a few hours in cold storage would not make bad meat good?—No.

By Mr. Poyser: Some conditions must have caused the difference. Meat in a low temperature would change because some of the bacteria would not thrive as in a warmer temperature. The most active temperature for the bacteria to grow in is 95° F., but this meat was, as said, in a temperature of about 40°.

The Bench: Assume the meat to be bad. Why is it injurious? People eat game for instance?—The poisonous chemical products of decomposed meat are exceedingly dangerous, but are not in the case of pheasants, etc. Birds show discolouration on the surface only. But high game is not without its dangers, especially to some people.

THE DEFENCE.

Sidney Thomas Robins, defendant's foreman, said on December 7th he put together the meat required for the next day's delivery to the Military Hospital. It included six legs of frozen mutton, which were laid on a board to be taken the next morning. It was about seven at night that he put them on the board. The legs had arrived from market that day. He took the consignment to the hospital.

By Mr. Woodhouse: He had had eight years' experience, and was convinced that all the meat was good.

Had you washed the shelf referred to the night before?—No; but it was washed some time during the day, at dinner time.

Then there was nothing on the shelf to make the meat go wrong?—No; but weather, of course, has great effect on meat.

Note. Mr. G. Hatton is wrongly described (p. 417). He is managing partner in the Griffin's Meat Co.

Was objection at once made to the condition of some of the meat?—Yes; and I was told to stand outside. I was brought back an hour afterwards, when I was told to fetch Mr. Knight. I did not know that the meat was to be rejected.

Was the meat when you saw it later, in the afternoon at the shop in the same condition as when you delivered it?—Yes.

Were the seven which were rejected good?—Yes.

Was there no smell?—No.

Or from the other two legs?—No. I could not smell anything wrong.

And about the weather?—It was raining when I took the meat.

Was the meat flabby?—Just as ordinary is mutton when it has been de-frosted.

Re-examined: The seven legs alluded to were English, not frozen.

Mr. Knight, the defendant, said he had been in business at Springbank Road for 16 years. He had been a butcher since he was 12 years of age. He never before had been summoned for such an offence. He bought the legs of mutton in question on the previous day, December 7th, in the Market, paying the ruling price for best quality frozen mutton. It was de-frosted, and in a perfectly good state. The meat, after the seizure, was put pending further examination in his cold store, which had a temperature of about 44 degrees. It was damp, as de-frosted meat was, especially in damp weather. The meat, nevertheless, was perfectly sound and fit for food. As to the seven legs, they were returned, and the next morning he took them back himself. Dr. Toogood indeed said the legs ought not to be cooked that day, as they were not thawed out. I replied they were English, and had never been frozen. He was surprised when reminded that they were the same legs as had the previous day been rejected.

Do you agree with your man that the meat was in first-rate condition?—Yes.

What is your explanation as to the statements of the hospital people that the smell was objectionable?—There was no smell.

Smell would go away no doubt in a cold room?—If it went in with an offensive smell it would come out with the same offensive smell.

Did you notice the colour and condition of the meat?—Yes.

Then you were thunderstruck when you heard the meat was condemned?—No. I regarded the condemnation as being an administrative duty by the magistrate, and had already arranged for an expert to come down to examine the meat.

Replying to further questions, the defendant said no other meat had been rejected that week. Since he had held the contract there had been one or two rejections. In one case Scotch beef was rejected on the ground that it was chilled, but as he could prove that it was Scotch it was subsequently accepted. He saw Dr. Toogood the next day, and he said, "I must alter the weather conditions," and up to that time there had been no friction. Meat always had a smell, and in this case he meant that there was no abnormal smell. One rejection because meat was alleged to be ewe instead of wether was subsequently accepted because here again he could give proof that he had delivered in strict accordance with the terms of the contract.

By the Bench: He only bought these frozen legs on December 7th. The two legs were average quality. Of course they would look dull, having been de-frosted. He did not agree that these were any worse than the average.

Mr. Geo. Hatton, employed by the Griffin Meat Co., an old-established Smithfield firm, spoke as to the sale of the meat to the defendant. Witness had had 25 years' experience. On December 7th he sold six legs of

frozen mutton. They were de-frosted and in a fairly good condition according to the weather, though they did not dry as they should because of the dampness. There was often a slight discolouration in bad weather with de-frosted meat, and often a slight smell. If such meat were wiped it would be improved to some extent. When cooked the meat would be quite good. The meat was sold at a fair market price, and it was impossible for it to have got into the bad condition alleged. The meat when sold by his firm had been one day out of cold storage, and should have remained good for a week. Witness mentioned that he had had great experience, being surveyor of carcasses for several authorities.

Cross-examined: Quite a thousand legs of mutton came before him daily. He did not, of course, smell each leg which was sold. The weather would affect the surface, but would not necessarily render meat unfit. Meat would have to be very bad before it would smell offensively. All meat when de-frosted had a faint smell.

By the Bench: If these particular legs had not been bought by Mr. Knight they would have remained in the market three or more days without deterioration, but would be hung and not lumped together on a shelf.

Mr. A. C. Melliish, a member of the St. Marylebone Borough Council, Chairman of the Works Committee of the Borough, and President of the Incorporated Society of London Meat Trades, a prominent member of the meat trade, was called, and said the effect of weather on frozen mutton was noticeable on the day in question, it was so damp that water was trickling down the walls. He was called to see the mutton at Mr. Knight's. He inquired where the meat had been kept overnight prior to delivery, and found that it was kept in readiness for despatch next morning.

By Mr. Woodhouse: He saw the meat, and it was quite fit for food. Frozen meat did get discoloured when it commenced to thaw.

Mr. Woodhouse: Would it take an expert to decide whether this meat were fresh?—Yes, because being of bad appearance might make the ordinary person think it was not fresh and good.

Cross-examined: It was not always possible to say whether meat was bad without using the skewer. A mere superficial examination was not enough.

Mr. William Coggan said he had had forty-five years in the trade. He was for years a member of the Examining Committee of the Sanitary Institute. He agreed with the evidence as to frozen meat, but would go further than Mr. Hatton. He had never yet seen an unsound joint of frozen meat.

By Mr. Woodhouse: It was apt to get unsightly—most unsightly in certain circumstances, but it was not a proper test to condemn it on appearances. The only way was to put in a skewer or cut a piece away.

Mr. Poyser: Then mutton which had been frozen never decomposed?—I don't say that. I say that the meat is always sold before there is time for the meat to get unsound.

By the Bench: There could be no decomposition until the whole of the frost had been got out of the meat. The frost had a preservative effect.

Prof. Wooldridge, F.R.C.V.S., said he had had considerable experience of meat. He saw the mutton at Mr. Knight's shop. The legs were soft and damp, and the cut ends discoloured from exposure. On manipulation they felt soft. There was no abnormal smell. He passed skewers in the legs, particularly close to the bone, but could discover no bad smell on the skewer afterwards. The smell was normal.

By Mr. Woodhouse: It was quite sound, but it had been de-frosted too rapidly and that had caused its soft condition. The condensation of atmospheric moisture on a cold joint on a muggy day also tended to make the meat wet. There was no evidence or sign of putrefac-

tion. It was sound and fit for human consumption. The fact that the meat had been kept in the store at Mr. Knight's shop would not have taken away a bad smell. The only effect would have been to have prevented further deterioration. He could not indeed conceive how the meat could have been described as so bad as the prosecution alleged. When he made his examination the meat was quite good.

Cross-examined: He would not agree that the mutton was grey. His view was that it was brown. It was flabby, undeniably, but not objectionable. He would not flatly contradict the allegation that the meat smelt offensively when delivered at the hospital, but would certainly suggest that the witnesses had exaggerated. When he saw the meat there was no offensive smell. The odours must have been external or he would have smelt something when he inserted the skewer later in the day. The smell could not have come from the interior.

For the defence, Mr. Woodhouse contended that the meat was not unsound.

The Bench interposed with the suggestion that the summons should be amended and made to be in respect of "unwholesome," instead of "unsound" meat.

Mr. Woodhouse replied that there would be no end of dispute as to what was unwholesome. For example, to many people shell fish was most unwholesome, but no man could be convicted of buying things on the premises which were not wholesome.

Mr. Woodhouse urged that the Public Health authority and the military men were naturally prone to condemn food when there was a doubt. In this case, however, the expert evidence was undeniably in support of the defence that the meat was quite good. There was no-

body in a better position than Prof. Wooldridge to say whether the meat was sound or not. At the lowest he contended that there was a doubt as to whether the meat was unsound.

DISMISSED.

In summing up, the magistrate said Mr. Knight had done nothing morally wrong except in permitting his servant to take the meat out which had not been hung up the night before. If the meat had been consumed by the patients at the hospital, or by anyone else, he was not quite sure it would have done them any harm, but he did not think it would have been wise to have given it to them. The doctor was quite right in rejecting the meat, and, in consequence of the unscientific way it had been defrosted, and keeping it out of cold storage in the shop had produced a state in which the meat was. The hospital authorities would have been doing wrong to have allowed the meat to have been cooked. There was only a slight amount of negligence. In ordinary weather the meat would have kept for a fortnight. Without recording a conviction, he would, in the exercise of the wide discretion he had in these matters, dismiss the summons in reference to the mutton on payment of 20 guineas costs. The other summons was withdrawn.—*Meat Trades' Journal*.

[The foregoing abridged report of proceedings, although presenting little that is new in such cases, is an example of the kind of evidence that practitioners in connection with meat inspection may find themselves "up against" at any time. We are indebted to the courtesy of the Editor of *The Meat Trades' Journal* for the use of their MS. report of the case.]

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.
	(a)		(a)		(b)		(b)			(a)	
GR. BRITAIN.											
Week ended March 4	16	18			1	1	68	147	4	97	214
Corresponding week in											
1915 ...	17	17					‡ 52	‡ 101	7	55	206
1914 ...	24	25	4	84	8	12	69	181	8	68	506
1913 ...	8	8			4	5			1	35	327
Total for 10 weeks, 1916 ...	183	146	1	24	14	45	850	2140	186	791	2880
Corresponding period in											
1915 ...	172	192			7	11	‡	‡	114	746	3048
1914 ...	191	205	9	65	22	59	801	1619	119	550	5021
1913 ...	127	141			85	105	817	1767	92	887	3804

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

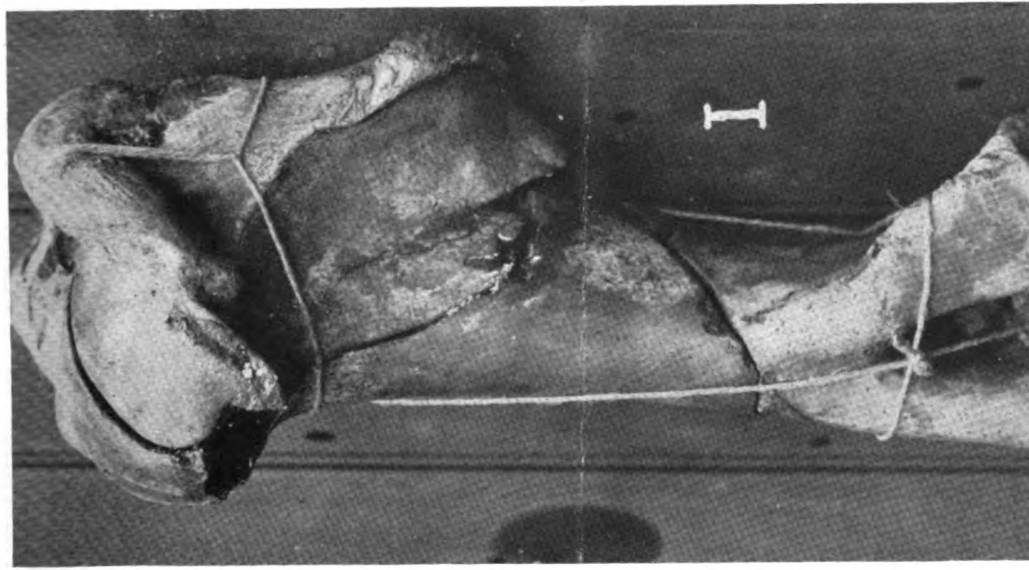
† Counties affected, animals attacked :—Kent 1.

Board of Agriculture and Fisheries, March 7, 1916.

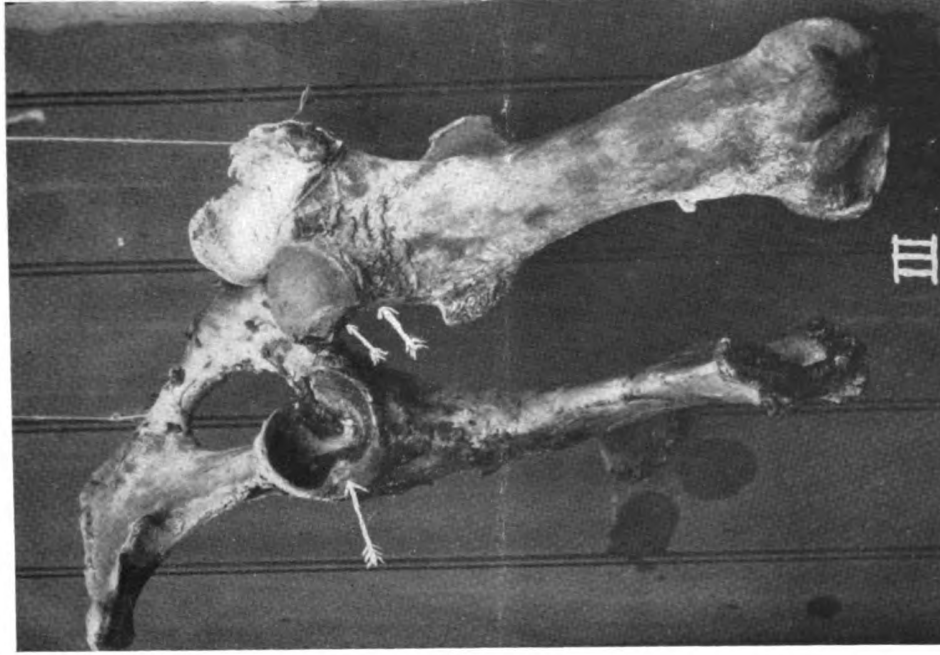
IRELAND.	Week ended March 4	Outbreaks						12	8	36
				
Corresponding Week in	1915 ...	...	...	...	...	...	...	10	8	14
	1914 ...	...	...	26	398	...	...	10	10	44
	1913 ...	...	...	...	...	...	1	17	1	...
Total for 10 weeks, 1916	...	1	5	...	...	...	...	18	154	44
Corresponding period in	1915 ...	...	...	...	...	...	...	10	141	47
	1914 ...	...	...	2	241	...	...	25	228	44
	1913 ...	...	...	...	...	...	...	65	184	86

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, March 6, 1916.
 N.B.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection



I. FRACTURED HUMERUS.



III. DISLOCATION OF HIP JOINT.

To illustrate cases reported by Mr. E. O'Neill, at the meeting of the Midland Counties V.M.A.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1445.

MARCH 18, 1916.

VOL. XXVIII.

VOLUNTARY SUBSCRIPTION v. A LOWERED STANDARD.

Voluntary subscriptions to the R.C.V.S. continue to flow in—slowly, it is true, but nevertheless steadily. It is noteworthy that they do not yet show any sign of falling off—indeed, their general tendency so far has been rather to increase than diminish—and that a good proportion of them have come from prominent men. Four present and three past members of Council, three examiners, and some other equally well-known men have subscribed already. Not a few men, also, have spoken in support of voluntary subscription. Altogether we have abundant evidence of a strong feeling in the profession in favour of voluntary subscription; and it must be remembered that all subscriptions, so far, have been sent not only unasked, but in the face of an attitude of the Council which at least suggests discouragement of such action. If men will subscribe under these circumstances, there is no doubt that very many more would do so if asked by the Council. The profession is ready for a voluntary subscription; the only thing still lacking is a lead from the Council.

Early next month the Council will meet, and will be confronted by two alternatives; One is, to adopt the proposed "retrenchments" as bye-laws. No one claims that this course would avert a deficit at the end of the year; everyone recognizes that, while reducing our deficit, it would gravely impair the efficiency of the College. The very proposers of these "retrenchments" admit their drawbacks, and only advance them as temporary financial expedients. However temporary they might be, they would reduce our examination system below that of the medical profession while they lasted. That ought to be avoided until it is shown to be the last resource.

It can be avoided now by adopting the alternative—an appeal from the Council for subscriptions. No valid objection has yet been offered to this course; and a great deal can be said for it. It may very possibly be more productive than any retrenchments; and, from our knowledge in the profession, we believe that it would be. It would preserve the efficiency of the College; and on that ground the Council ought to adopt it. They may yet do so, and members may help to that end by subscribing freely during the next fortnight.

It would be better to trust to our own *esprit de corps* than to commit ourselves to two or three years of corporate inefficiency—we believe this to be the view of the profession, and we hope to see it reflected by the Council.

OUTBREAK OF DIARRHŒA IN COWS.

By W. R. DAVIES, M.R.C.V.S., Enfield.

On Tuesday, Jan. 11, I was requested to attend some milch cows, several of which were purging. The herd consisted of 60 cows in milk, and a bull.

Six animals were affected, and showed the following symptoms. The appetite was completely in abeyance. Temperature either normal or sub-normal, respiration normal; pulse for the most part accelerated. The extremities of all the affected animals were extremely cold. There were copious evacuations of fluid fæces and considerable straining, tail elevated all the time.

On the following morning 20 other cows were found to be affected, and during that day and the next the whole herd, with the exception of the bull and two cows, were attacked.

All the patients gave very much less than their ordinary amount of milk: some gave none.

The treatment consisted in the exhibition of chlorodyne, oil of peppermint, oil of cajuput, and mucilage of tragacanth, together with a complete change in the food. All the animals recovered with the exception of one fat cow (nearly ready for the butcher).

This cow presented symptoms not shown by any of the other patients. She purged violently in the morning, but this stopped during the day. The other symptoms observed in her case were paddling with the hind feet, swaying from side to side, excitement, staring eyes, slight salivation. She was removed to a loose box, and on the way staggered and tumbled about, and seemed to have little control over her hind part. Soon after getting to the box she went down and lay with the head tucked into the side. Altogether the symptomatic picture was that of milk fever—she died on the following night.

The post-mortem appearances were almost negative. Whereas the stomachs were absolutely normal there was a certain amount of hyperæmia of the intestinal mucosa, particularly marked in the large intestine and rectum.

By the end of the week the cows appeared to have recovered; the milk, however, was greatly reduced in quantity. On Tuesday, 18th January, ten cows again were found to be purging and had to be treated, and on the following Friday another ten were attacked. Two or three doses each of the

* Reported at the meeting of the Central Veterinary Society on Feb. 2.

medicine put these right, and there have been no more cases. The cows are to-day doing well, but the milk is still down a good many gallons per day.

The urgent question was, of course, to find the cause of the sickness, so as to prevent a recurrence of the malady. I expressed the opinion that this lay in the food, and was some vegetable narcotic irritant. (The farmer was inclined to look upon it as being of infectious nature).

The food consisted of oat straw chaff, hay, middlings, a proprietary meal, linseed cake, nut cake, cotton cake, brewers' grains, kohl-rabi, and mangolds (pulped). The chaff was part of a large lot that had been in use for six weeks. It appeared to be bright and sweet. As to the hay, it consisted of a second cut from an upland field and had been first used four days before the outbreak. I examined it but could find nothing likely to induce the symptoms; however, a sample was sent to a botanist to get an opinion—he found the sample to contain no poisonous plants. Fourteen heifers and in-calvers at grass have had four or five trusses from this stack every day without ill-effect. The middlings were part of a lot that had been in use for a fortnight.

The proprietary meal had only been fed to the cows for a few days before they were attacked, but what negatived to some extent the idea that this could be the cause was the fact that a neighbour received a consignment of the meal on the same day on which my client had got his stock, and although he used much larger quantities for his cows they had not been in any way upset by it. The cakes were all free from rancidity and were in other respects, so far as external appearances went, excellent. They were bought in conjunction with a neighbour who took three-fourths of the lot, and his cows showed no ill-symptoms from ingesting them. The brewers' grains were sweet, and had been in use for three weeks. The mangolds were only used in small quantity, and they were quite sound.

On examining the kohl-rabi, which formed the basis of the root feed, I found that a good many of them were decayed, rotten and spongy. The farmer assured me that the bad ones were thrown away, but admitted that a certain number (sound looking outside but rotten within) might get put through the pulper, and added that in any case they had been fed along with some malt dust to a lot of young stock without harm.

He told me also that these kohl-rabi had been grown on a sewage farm, and wondered if that might have an influence, an idea which, for my part, I did not entertain, as the cows had been having them since November.

In the face of so many contradictions I certainly felt puzzled, but, while advising that a sample of the meal should be analysed (and its use prohibited meanwhile), I laid the blame on the decayed kohl-rabi. In this I based myself on the long list of cases quoted by Fröhner in his work on "Veterinary Toxicology." According to this author, decayed roots (turnips, potatoes, beet), fermenting grains, rancid cakes, etc., owe their ill-effects to toxins

produced either by fungi (moulds, blights, rusts) or by specific bacteria, and have a close analogy in their action to that observed in decayed flesh poisoning (ptomaine poisoning).

Two classes of symptoms may present themselves, one related to the irritant action of the poison on the digestive apparatus—consisting of salivation, colic, vomiting or attempts at vomition, constipation followed by diarrhoea, straining, hæmaturia. The other, due to the effects of the poison on the nervous system, evinced by dilatation of the pupils, trembling, staggering, weakness of the hind parts, paralysis, convulsions, coma. A long list of outbreaks is given, among which occur the following:—

Sir J. M'Fadyean, in 1897, saw 11 horses die after eating old, much decayed potatoes, with symptoms of weakness and paralytic appearances. On post-mortem only slight inflammation of the large intestine was observed.

Prietsch observed an enzootic-like outbreak of gastro-enteritis in cattle after eating rotten potatoes. The animals showed fever, colic, continuous sometimes bloody diarrhoea, great weakness, decrepitude, and death after a few days.

Robert reported an outbreak of profuse and fatal diarrhoea in swine after eating decayed potatoes.

Gotteswinter observed cattle die after eating decayed beetroot, with symptoms of brain excitement, forward pushing, tumbling, falling. Some had cramps, others stood stupidly, with sunken head. Other cases occurred in sheep after rotten beetroot: in cattle, from offensively smelling grains: in horses, from spoiled hay: in horses, from bad pea straw: in cattle, after rancid earth-nut cake.

Since our meeting, I have learnt that through a mistake on the part of a helper, some of the proprietary meal was added to the feed the day previous to the second outbreak. As this was immediately followed by a return of the symptoms it is evident that the meal is at fault—a conclusion confirmed by the analytical report, which states that although no poisonous ingredients were found, yet the presence of abnormal quantities of fatty acids points to changes in the meal due to heating.

INTER-DIGITAL ABSCESS OF THE DOG.

No satisfactory reason having as yet been put forward by the profession with regard to the probable cause of this obstinate, painful and recurring trouble, which seems to be fairly common all over the United Kingdom, I thought that my experience of this trouble amongst dogs in a medium-sized dog practice would perhaps open out a new theory as to the probable cause of the malady.

My observations and statement cover a period of about four years, and as far as I can remember, I am placing the patients according to the numbers affected.

Perhaps veterinarians of larger experience and practice will compare their returns with mine.

Airedales and Irish Terriers are an easy first. Then come:—

Border Terriers and Collies: Sable, fawn, and sable and white.

Bull Dogs: Brindles, sables, fawn, and sable and white.

Greyhounds and Whippets: Brindle, sable, and fawn.

Water Spaniels and Labradors of the liver colours and lemon shades.

Pugs and Pekingese: Fawns and sables.

Dachshunds: Fawns and reds.

Scotch Terriers (of mixed coat) rarely.

From this list I feel certain that *colour* may be a deciding factor in solving the problem.

I have rarely had a case in a dog of a colour other than those mentioned, and yet of the same breed. My experience may be a coincidence, and my observations may have nothing in them—but at the same time a further “airing” of the problem on a new line of attack may go some distance in elucidating the mystery.

CLEMENT ELPHICK, M.R.C.V.S.,

Newcastle-on-Tyne, March 14th.

ABSTRACTS FROM FOREIGN JOURNALS.

CALCULUS OF THE CÆCUM WITH A RUPTURED ANEURISM OF THE INFERIOR CÆCAL ARTERY.

Magnien has recorded this case (*Rev. Vét. Milit.*). The subject was a mare, known to be predisposed to enteric disorders. On this occasion, when the mare was thought to be suffering from one of her accustomed attacks, dull, intermittent, colicky pains set in, and rapidly disappeared. From the 18th to the 25th of January these colicky attacks were repeated, especially if the animal was ridden, and each time with increasing violence. On the 26th, distinct signs of intestinal obstruction appeared, which improved under an appropriate treatment. Suddenly, however, the symptoms reappeared; the colicky attacks became more frequent and more severe, and caused complete loss of appetite. The fæces, which were evacuated in small quantities, were hard, dark-coloured, and covered with a muco-membraneous envelope. On the 20th February the mare died in consequence of an intestinal hæmorrhage.

Post-mortem examination revealed the following lesions. The cæcum was abnormally vascular, especially about its base, and was dark in colour. At the origin of the inferior cæcal artery, there was a ruptured aneurism. The interior of the cæcum contained calculus measuring about 8½ in. by 6 in., and weighing approximately 5 lb. 6 oz. The central nucleus of the calculus was formed by a piece of flint the size of a walnut, and the concentric layers round this were composed of ammonio-magnesia phosphates, calcareous salts, and alimentary residues. The colon, throughout its extent, was the seat of an old chronic enteritis.

The author mentions some special symptoms which the mare showed during life. Some of these

are classical ones, such as the position of sitting like a dog. Others are more novel, such as frequent wide yawning, attempts to bite when approached with a view to mounting, and loud groaning when the rider came down upon the saddle.

The author had projected a laparotomy, which the mare's death from enterorrhagia frustrated.—(*Revista de Veterinaria Militar*).

W. R. C.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

[NATIONAL V.M.A.—NORTHERN BRANCH.]

The Annual Meeting was held at the Grand Hotel, Birmingham, on Friday, February 18th. The President, Mr. John Malcolm, Birmingham, occupied the chair; there were also present: Messrs. J. Martin, Wellington, R. C. Trigger, Newcastle-under-Lyme, T. Slipper, Sutton Coldfield, F. H. Gibbings, Nottingham, W. H. Brooke, Handsworth, J. J. Burchnall, Barrow-on-Soar, E. O'Neill, Birmingham, W. Grasby, Daventry, D. Forwell, Towcester, H. Yeomans, Smethwick, R. Murray, Rugeley, W. E. Ison, Atherstone, A. B. Forsyth, Cannock, T. Young, Birmingham, and the Hon. Sec., Mr. H. J. Dawes, West Bromwich.

Apologies for absence were received from Prof. Mettam, Messrs. P. C. Woolston, T. J. Whyte, E. Ringer, R. L. Phillips, T. J. Brain, R. McGregor, J. Martin, jun., T. C. Deville, W. S. Carless, L. W. Heelis, F. L. Gooch, J. R. Carless, H. R. Reynolds, Taylor, and others.

The minutes of the previous meeting were read and confirmed.

TREASURER'S REPORT.

The HON. TREASURER, Mr. J. J. Burchnall, presented his accounts for the year. These showed subscriptions £45 10s. Od., and bank interest £3 11s. Od., making, with the sum of £168 5s. 11d. balance in hand the previous year, £217 6s. 11d. on the receipts side. The expenses were: Affiliation fees to National Association, £4 5s. Od.; annual subscription to Victoria Veterinary Benevolent Fund £5 5s.; expenses of visitors reading papers, etc., £5 5s.; Secretary's accounts, £17 13s. 9d.; Treasurer's expenses (postage, etc.), £1 3s. 3d.; leaving a balance in hand of £183 14s. 11d.

Mr. TRIGGER moved the adoption of the accounts and congratulated the Treasurer upon the Association's sound financial position.

Mr. O'NEILL seconded, and suggested that part of the balance should be invested in the Government War Loan.

The HON. TREASURER said he thought it would make very little difference, as under the present arrangement the bankers made no charge for commission, and if the money was in war loan there would be 3s. 6d. in the £ deducted for income tax.

Other members agreed that no advantage would accrue from a change.

The accounts were then passed.

ANGLO-FRANCO-BELGIAN VETERINARY RELIEF FUND.

The HON. SEC., in accordance with notice duly given, moved that a sum of ten guineas be given by the Association to the Anglo-Franco-Belgian Veterinary Relief Fund. The matter was discussed at the previous meeting, but a subscription could not then be voted without due notice. He read again the circular setting out the claims of the Fund upon the charity of the profession in this country, and said that as this Association had such a handsome balance in hand it could be put to no

better purpose than by devoting some portion of it to this worthy object.

This was seconded by Mr. Grasby, and carried unanimously.

REPORT OF COUNCIL.

The Council met immediately prior to this meeting; the report contained the following recommendations:—

That the retiring officers should remain in office during the continuance of the war.

That at the next meeting of the Association in May, instead of a set paper, matters of interest to the profession be discussed.

That the Association continues its cordial support to Mr. R. C. Trigger, its representative on the Council of the Royal College of Veterinary Surgeons in the coming elections.

ELECTION OF OFFICERS.

Mr. TRIGGER moved that the officers be re-elected, and thanked for their services during the past year. He said that as things were at present he did not think a change was desirable. There was this further advantage, that the Association had a very capable and enthusiastic body of officials.

Mr. GIBBINGS seconded, and it was agreed to without discussion.

The PRESIDENT, in returning thanks, promised on behalf of himself and his fellow officers, that they would do their best to ensure the success of the Association. It was not an easy thing to maintain interest in things of this kind while the war was on, but he relied upon the sympathy and support of the whole of the members.

COUNCIL ELECTION, R.C.V.S.

The HON. SEC. moved that the Association officially support Mr. Trigger in his candidature for election to the Council of the R.C.V.S. Mr. Trigger retired by rotation this year, and had been re-nominated by Mr. Malcolm in the name of the Association. Mr. Trigger had been the official representative of this Association on the Council for the past 26 years, and during that period had worked very zealously for the interests of the profession in general and of this Association in particular. At the last meeting of the Council some very stringent alterations in connection with the examinations were suggested, but he questioned whether the proposed retrenchment in regard to the examinations would be to their ultimate good. He (the speaker) suggested that during the war, as the number of students was so small, they should get a board of honorary examiners. There might be some difficulty in regard to the medical examiners, but he was quite certain there were members of the veterinary profession quite as capable as medical men in examining students. When it was remembered that the Council is composed of gentlemen residing in all parts of the country who give their time to the work without payment, and who even had to pay their own travelling expenses, it ought not to be difficult to get together an efficient board of honorary examiners.

That led him to mention the question of the Bill. There was no chance of the Bill being passed into law during the continuance of the war, and it had been suggested that the profession should be asked to subscribe a guinea per member per annum to enable the R.C.V.S. to meet their obligations without having to dispose of any more of their assets. He thought that was a very good idea, and if a circular were sent out explaining the situation the response would be found to be a very gratifying one. Of course, subscriptions might be sent in any case, but to make it official, he thought an appeal should be made direct by the College. He believed some people objected to the guinea subscription proposal on the ground that it might interfere with the success of the Bill, but he thought otherwise.

In all these subjects Mr. Trigger brought to bear sound judgment and long experience. He had the utmost confidence in recommending him again as the Association's representative on the Council of the College.

Mr. GIBBINGS, in seconding, said he was afraid that if the guinea subscription was adopted it might have the effect of killing the Bill. However, he was sure the Council were fully alive to the seriousness of the situation, and would do what they thought right in the matter.

The PRESIDENT said he would like to support the motion, as he was in a position to testify to the magnificent work which Mr. Trigger had done for the profession during his quarter of a century's work on the Council. He (the President) took it upon himself to nominate Mr. Trigger again on behalf of the Association without waiting for this meeting, feeling sure that it would be the wish of the whole of the members that he should do so. If Mr. Trigger, with all his experience of the work, were to retire at this moment he could not help thinking it would be a calamity. [The motion was carried by acclamation].

Mr. TRIGGER, in reply, said it was very encouraging to him to know that after 26 years' work on the Council he still enjoyed the confidence and good will of those whose particular nominee he was. Under ordinary circumstances he would have liked to retire and make way for younger men, and if he could see the guinea fee proposal carried he would gladly do so, but his chief reason for wanting to serve another term was that he might see the Bill through. He had had something to do with its passage thus far. He believed that when the war was over there would be no difficulty in getting the Bill passed.

Concerning the suggestion of Mr. Dawes that they might get voluntary examiners in the same way that they had voluntary members of the Council, there was this to be remembered, that whereas the Council only kept a man away from his practice a couple of days at a time, examiners were away from home a week at a time. He did not like a drastic change, but he believed it was inevitable at the present juncture. The College were losing £800 or £900 a year at present, and by dropping one examiner in each subject and re-arranging the work, they hoped to effect a saving of £500 straight away. That left them with a loss of about £300 a year, and he was afraid things would get worse, as there were no students coming along just now, and the men in the later classes were being hurried away to the war. If they could get only £300 a year in the proposed voluntary subscriptions it would meet the case, and if not, with their annual loss reduced to £300 a year they could keep off bankruptcy so much longer, and wait while the Bill was passed.

MIDLAND MAN'S WAR HONOURS.

The HON. SEC. mentioned the fact that Mr. Brennan DeVine, of Birmingham, a member of this Association, had been twice mentioned in despatches and had also been awarded the Military Cross. They were all delighted at such a signal honour being conferred upon one of their fellow members, but those who knew Mr. DeVine were not surprised. He was a man of great personality, who was bound to distinguish himself in whatever sphere he moved. He proposed that a letter of congratulation be forwarded to him in the name of the Association.

Mr. GRASBY seconded.

The PRESIDENT said that as one who was able to appreciate more than most people Mr. DeVine's professional ability and personal merit, he should like to associate himself very directly with this resolution.

The motion was carried unanimously.

INTERESTING CASES.

Mr. O'NEILL said he had two cases which he would like to mention:—

DISLOCATION OF THE HIP JOINT.

Subject, a big cart mare, about nine years old, and working a heavy double-shafted wagon.

At the time of the accident she, with the other horse, was backed up to a railway wagon, while the driver and his mate unloaded sacks of barley into the wagon. It happened that there was a slight incline, so that one side of the wagon was lower than the other, and due to this, and chiefly to the fact that the men unloaded the sacks from the rear and chiefly upper side of the vehicle, the latter became unbalanced through too much weight being thrown on the lock or fore-carriage, with the result that the vehicle capsized, carrying over the horses with it.

When liberated, the subject of the accident was found to be unable to bear weight on the off hind leg. Examination showed dropping of the quarter, flatness in the region of the hip joint, and, later on, a considerable amount of swelling about the thigh and leg. At any attempt to bear weight the leg was inclined to go forward.

Although suspecting dislocation, I could not diagnose same with certainty: so put her in slings and applied a blister. She got colic and died after about four weeks, and post-mortem examination showed where the head of the femur had been ground away somewhat, the same happening to part of the rim of cotyloid cavity.

DOUBLE FRACTURE OF HUMERUS.

The subject of this accident was a medium-sized cart horse, about 16 to 17 years old, sound, and a keen, fast worker.

He was being used as a trace or "pull-up" horse, helping a heavily loaded pair-horse van up an incline, when the driver of the latter stopped his horses suddenly and without warning the man in charge of the trace horse, with the result that the latter was pulled clean off his legs on to the point of shoulder. He was got up and taken to the sick lines, and put in slings.

When I saw him about an hour after the occurrence he exhibited a good deal of constitutional disturbance, nervousness, sweating, etc., inability to bear weight on injured leg, dropping of elbow, and flexing knee.

Examination revealed crepitation in lower third of bone. Post-mortem examination showed the fracture (longitudinal) through head.

LARGE SHOULDER TUMOUR.

Mr. YEOMANS produced for examination an ordinary shoulder tumour which he had removed from a horse three months ago. The weight of it was 5 lb. 9 oz., which he thought was something unusual. The mare has gone on well since, and the wound was now practically healed. The tumour was attached to the jugular vein, which made its removal a matter of extreme caution.

Mr. Yeomans also produced a curious specimen of a molar tooth which had no crown, and was thus difficult to extract. Ordinary forceps crushed the tooth. He got it away after using a local anæsthetic, cutting down and literally pushing the tooth out. The horse was well and at work again in five or six weeks.

RUPTURED COLON AND CALCULI.

Mr. TRIGGER, on behalf of his nephew who was unavoidably absent, described a case of a rupture of the large colon in a black gelding of the Belgian type. The horse, aged 11, was attended for colic in 1908, when it was very ill, but two days later it recovered and had worked ever since. In the present case, the owner

thought the horse was suffering from a stoppage, and drenched it with linseed oil. Next day Mr. Trigger received an urgent message, as the horse could not pass water.

He found it showing colic symptoms, getting up and down at intervals, but not rough when down. The pulse was steady, the ears warm and comfortable, the bowels rather loose, the breathing very little altered, but urination difficult and the facial expression haggard. Food and water was refused. He left a stimulant.

From the third to the fourteenth day there was purging, but the other symptoms were as before. On the 14th and 15th days violent pains were reported, which disappeared after the patient had received another colic drink. Mr. Trigger found all the symptoms as before, except that now there was no difficulty in urinating. On the 16th day there was no change, and food and water were still refused. On the 17th day the patient was drinking gruel, and was brighter, and inclined to grab at you with his teeth—a playful habit of his in good health. The other symptoms, however, were the same as before, and the condition consequently still grave. On the 18th day there was little change, the patient drinking gruel readily, and during the night he passed two large clots of blood, sufficient to fill an egg cup. On the 19th day the only difference was that the fæces were not quite liquid. At night, he got loose and was found dead in another stall. The post-mortem revealed a rupture of the large colon by a calculus of about 8 lb. weight.

Mr. O'NEILL said this case brought to his mind the case of a five-year-old mare, in which the foreman reported colic symptoms. She was put in a loose box and given a drink. Next day her temperature was 105, and he (Mr. O'Neill) thought it was pleurisy or septic pneumonia. In twenty-four hours she was dead, and he was never more surprised in his life than he was to find a ruptured colon and the cavity full of fluid.

Mr. SLIPPER produced a curious specimen of a calculus which he took from the small colon of a horse. It was in pain for 12 days and nothing would shift it. He had it killed, and it was surprising how long the animal had lived, there having been no action of the bowels at all. The calculus was of a very irregular shape and quite soft.

The HON. SEC. said he recently had a case of an old pony suffering from stoppage. The usual remedies were applied, and the pony went on for 16 or 17 days with no action of the bowels. The curious part of the case was that on the eighth day it developed laminitis, from which it recovered in two or three days, but there was still no bowel action. The pony died, and he found that a calculus was the cause of the trouble.

RECURRING SORE THROAT.

Mr. BROOKE said he had a case which he wished to mention, as much for his own enlightenment as for the information of the meeting. The symptoms were not uncommon, but the course of the case was unique. Mr. Dawes was called in as consultant, and he would be able to add a few remarks to his own. A six-year-old pony had what appeared to be an ordinary acute sore throat. He had previously noticed that the glands were enlarged and hard, but he took no particular notice of that. On June 14th last, it had a very acute sore throat, with a profuse discharge from the nose, food returned through the nostrils, a slobbering at the mouth, a painful cough, head out, temperature 105, and a lot of noise when breathing. The trouble yielded to treatment, and the pony got to work again. On July 10th the same thing occurred and the pony again got better. The same thing happened on August 16th, September 15th, October 9th, and November 3rd. The pony got better each time and worked as usual in the intervals. He had a look to see if there was anything the matter with the

guttural pouches, but could find nothing wrong in that direction. The only way in which he could account for it was a periodic enlargement of the lymphatic glands, which were probably left weak from a previous attack of strangles. After consultation with Mr. Dawes, he gave the pony phylacogen, and the pony improved so much that the owner sold it without a guarantee for 23 guineas. He would like to have the opinion of his fellow practitioners on the case.

Mr. DAWES said he saw the pony on two occasions. The first time he saw it the pulse and temperature were quite normal. The pony was in good condition, quite lively, and eating well. He suggested to the owner that he should put him to work to see if he could work it off. He did so, but the trouble recurred. He (Mr. Dawes) thought there might be some inflammatory thickening of the mucous membrane of the throat, and that was why he suggested phylacogen, a serum with which he had generally had good results. The result in this case was satisfactory. In the case of human beings a change of air was often very beneficial in similar cases, and he was told of a large hackney breeder who had several young horses troubled with coughs which did not yield to treatment, and he sent them to another part of the country with good results. He would not pretend to say what was the matter with Mr. Brooke's pony, because there was so little to be seen upon examination. No one seeing the pony casually would think there was anything the matter with it. He suggested tracheotomy, thinking it might give the throat a rest and allow the inflammation to become subdued, but the owner would not give his consent.

Mr. BROOKE, in answer to a question, said there was occasionally fever, but not always. Could it be anything but lymphatic trouble? The regular recurrence was the most puzzling part about the case, because it always got better under treatment.

Mr. YEOMANS asked whether it was possible that some foreign body was present, which formed pus, which was discharged but left the foreign body behind, and pus formed again?

Mr. TRIGGER said he once had to treat a cart horse that had a big lump in the neck which he could not explain. After various remedies without result, he one day, almost in desperation, put a seton through the lump, and to his surprise drew out a small key, belonging to a cash box. The key had evidently passed through the oesophagus and lodged in the neck.

Mr. DAWES said there was no swelling of that kind in the case to which Mr. Brooke had referred.

Mr. GRASBY agreed that it was a very interesting case, and said that as a change of air was recommended to people suffering from laryngitis he could not see why it should not be recommended for horses with throat trouble.

A FRACTURED PELVIS.

Mr. BROOKE mentioned another case which, as he had incorrectly diagnosed it, might be helpful to others. A mare he had known for a long time, doing baker's deliveries, required his attention a few weeks ago. After a hard day's work, she fell down in the stable and could not get up. She struggled, but was in no particular pain. She was an old mare, 16 or 17 years of age. She was blown up, and he thought there was bad colic. Next day he found her bathed in perspiration, passing coffee-coloured urine and breathing heavily. She died, and a post-mortem revealed something he never expected to find, namely, a split pelvis. There was a considerable amount of hæmorrhage, which he did not think was present in the early stages, and the peritoneal fat was overrun with hæmorrhage.

DISLOCATED CERVICAL VERTEBRÆ.

The HON. SEC. mentioned a case to which he was called a fortnight ago, of a horse that was kept in

slings. The rope had broken and let the horse down, and the groom found it unable to rise. The stableman had tried to get it up, but could not do so. When he (Mr. Dawes) arrived, he found the horse very much exhausted, and the slings were on, but they could not get it to move. He noticed something irregular about the head and neck, and discovered what appeared to be a complete dislocation of one of the cervical vertebrae about half-way down the neck. Prof. Williams, in his book, said that interference in such cases would probably cause instant death. However, he put a man to hold the horse's head, and pushed the neck back into position. The horse then got on to his legs and was quite natural. He tied the head so that it could not move, but he had not got far away from the stable when he was called back again. The horse had fallen down again, and he again pushed the neck back, and it stood on its feet once more. Next day the horse seemed all right as regards the neck but was unable to feed, snapping at its food without being able to pick it up. Next day, Mr. Dawes said, his son saw the horse and expressed the opinion that there was some interference with the nerve supply to the muscles. A day or two later the horse became exhausted, and he had the animal shot, and left word with the knacker's man to cut off the head and neck and let him have it, but unfortunately it was lost. He was very disappointed, because he would have liked to have shown it to the meeting.

FRACTURED ULNA.

The HON. SEC. mentioned another case that came within his experience several years ago. A carriage horse belonging to a Birmingham gentleman got kicked, and there was a fracture of the olecranon process of the ulna. He advised slaughter, but the owner's son objected, as the family were fond of the horse. It was got into the stable, put into slings, and the limb was put into a plaster cast, to support which he bound tapes over the withers. The horse was kept in slings a couple of months, and the plaster taken off, and the horse showed great tenderness. It was again put in a plaster cast, and left for another two months. The plaster was taken off again, and the horse left in slings for another month. It was then taken out of the slings, gradually got stronger, and did a couple of years work in the carriage, until it met with another accident which proved fatal. There was no doubt whatever about there being a fracture, and it was a rare thing for a horse to get well again under such conditions.

Mr. YOUNG mentioned a case of a mare (with a foal) which fractured her tibia. The leg was put into plaster of Paris, but the mare was not put in slings, nor did she ever attempt to get down. She got better, the plaster of Paris being allowed to remain on for three months, and she reared several more foals afterwards.

HORSE HOBBLER.

Mr. MARTIN exhibited a set of horse hobbles which he said he would not be without, and he explained the method of using them. He also described two interesting cases he had come across in his practice, one being a case of inverted cæcum, and the other a case of cystic calculus in a dog.

TUBERCULOSIS OF THE UDDER.

Mr. MALCOLM: In Mr. White's unavoidable absence, and at his request, I bring the following cases before you. The first two cases are recorded to illustrate the time a cow with tuberculosis of the udder may continue to yield milk apparently unaltered in appearance but containing tubercle bacilli. These cows were purchased at my request by Mr. White for Prof. Leith, who has been carrying on a series of experiments with tubercle infected milk in duplication of the experiments recorded sometime ago as having been carried out at Liverpool, in which a series of tubercle infected

milks were claimed to have been effectually sterilised by the transmission of certain electric currents through the milk. Prof. Leith's report of his experiments, which I understand are being carried out for the Government, is being looked forward to with interest.

In the meantime the cows giving the milk provide Mr. White's cases to-day. As a rule the period of apparently normal lactation after a cow's udder shows clinical evidence of tuberculosis does not appear to be long, but there is little doubt that infection of the milk is often much longer than is realised, especially in some cases. As bearing on this point I now submit to your notice the observed periods in two cases, A and B.

Cow A was purchased on May 31st, 1915, and kept in our possession until killed on July 29th, 1915. She was known to be giving infected milk for a month before purchase, but we cannot say definitely how long before; probably only for a short period, as she was carefully examined by Mr. White two months before purchase, and then showed no evidence of the disease. After purchase her milk yield was fairly good at first, but it soon began rapidly to diminish and alter in character, and lactation had completely ceased when the animal was killed. This cow was known to be giving normal looking milk from May 1st until nearly the end of June.

Cow B was purchased on October 6th, 1915; she was known to be giving infected milk August 27th, and it is not improbable that she gave it for a month or so before that. This cow when purchased appeared a very useful dairy cow, and with the exception of a slight enlargement showing some induration of the left hind quarter of the udder, there was nothing in her appearance to make one suspect her of being affected with tuberculosis of the udder. Indeed she looked such a useful cow that Mr. White had actually to give £15 for her. Her owner declined to take less, saying that he could easily sell her anywhere at that money. Under the existing law there was no power to prevent the owner from disposing of the cow, seeing that the Tuberculosis Order had ceased, and the Milk and Dairies Bill does not come into force during the period of the war. The cow continued to thrive on the whole fairly well and even now looks not much amiss in appearance, and while her milk yield from the affected quarters has altered in quantity it has not, to the naked eye, altered in appearance. I have here four bottles of milk drawn from this cow yesterday evening. You will observe that while the yield from the left hind quarter is only 6 oz., or a fifth of that from the right hind quarter, and the yield from the left fore quarter only about half that from the right fore quarter, there is no appreciable difference in their naked-eye appearance, and any ordinary milker might be excused for milking from both the left quarters into the pail with the other milk.

The following table shows the actual yield of the respective quarters on the last three consecutive Thursdays:

Date.	Right hind.	Right fore.	Left hind.	Left fore.	Total.
Feb. 3. a.m.	26oz.	21oz.	6oz.	10oz.	63
p.m.	32	26	6	13	77
10. a.m.	32	24	7	12	75
p.m.	30	19	4	9	62
17. a.m.	31	23	6	13	73
p.m.	26	20½	5	10½	62½

This cow is not in calf. I have thought that it might probably interest some of you to see her, and any of you who care to do so can see her outside in an ambulance in the street adjoining this building. She has now been giving normal looking infected milk for about six months, and looks like continuing to do so for some time yet. She is clearly a very dangerous cow, and is a good illustration that a cow can continue to give normal looking infected milk for a longer period than is usually

supposed to be possible. Those of you who examine her will observe that the disease is most marked in the left hind quarter of the udder where it evidently commenced, and has since extended to the left fore quarter. Manifestly affected with tuberculosis of the lungs, she probably has tuberculosis in the abdomen also."

[The members subsequently inspected the cow and expressed their satisfaction at having the opportunity of seeing such a good case of tuberculosis of the udder, and, considering the time that this cow had been giving infected milk, thought her in wonderful condition.]

Mr. Malcolm continued "On Mr. White's behalf, I have another case to bring before you of tuberculosis of the udder, and I herewith submit interesting specimens of the left hind quarter of the udder and of supramammary, mesenteric and retro-pharyngeal glands. On January 21st, when examining a dairy herd, Mr. White observed that one cow in good condition showed slight enlargement and induration in the left hind quarter of the udder. She presented no other clinical evidence of tuberculosis, yet he regarded the condition of the udder as very suspicious, and he took a sample of her milk which was submitted to bacteriological examination, and on February 11th this was returned as being infected. The cow was killed at the Birmingham Abattoir on Wednesday, the 16th inst., and after a most exhaustive and careful post-mortem examination conducted by Mr. White and Mr. Hothersall, chief meat inspector, the only tubercular lesions found by them in this cow are those I have submitted. You will see that while there is some induration and enlargement of the quarter, there is no evidence of any of what are known as tubercles to be seen in the quarter. The disease in this, as in so many other cases of tuberculosis of the udder, is solely marked by an increase in fibrous tissue and a diminution in the normal flaccidity of the udder tissue. The supramammary gland appears normal, and there is certainly no visible evidence in it of tubercle infection. The small mesenteric gland shows only a pin-point tubercular lesion. The retro-pharyngeal gland shows two tubercular lesions about a three-penny bit in size and one or two smaller points. In this case Mr. White, while suspicious, did not think the clinical evidence alone sufficient to warrant the slaughter of the cow, and he did not obtain any microscopic evidence to support the clinical evidence, and so he necessarily had to fall back upon the guinea-pig inoculation, which was, as usual, conducted for us at the University. This has the advantage that when a positive result is obtained by a competent worker it can be relied upon absolutely.

Had a less careful and thorough post-mortem been made the examiners might have maintained that there were no evident tubercular lesions present in this cow. It is a good illustration of the thoroughness and care that is frequently necessary in making a post-mortem examination."

H. J. DAWES, F.R.C.V.S., Hon. Sec.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds:—

Major-Gen. F. Smith, A.V.S.	£1	1	0
Mr. E. A. West, London	1	1	0
Mr. E. Measures, East Rudham, King's Lynn	1	1	0
Mr. F. G. Reynolds, St. Ives, Hunts	1	1	0
Capt. H. G. Bowes, A.V.C.	1	1	0
Mr. A. S. Adams, Dursley, Glos.	2	2	0
Lieut. E. B. Reynolds, A.V.C.	1	1	0
Amount previously acknowledged	39	18	0
	£48	6	0

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, Mar. 9.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieut. R. Colthurst relinquishes his commission (March 4).

To be temp. Lieuts.:—S. L. Wall (Feb. 28); H. V. Fenn (Feb. 29).

Mar. 13.

Temp. Lieuts. to be temp. Capts.:—H. A. Trudel, H. Chagnon, J. W. Bennett, W. B. Howe (Mar. 1).

To be temp. Lieut.:—G. Currey (Mar. 1).

Mar. 14.

Capts. to be temp. Majors whilst holding apmnt. of Asst. Director of Vet. Services of a Div.:—R. W. Mellard (Nov. 28); H. C. Stewart (Jan. 24).

Capts. to be temp. Majors:—G. W. Godwin, whilst commanding a Vet. Hosp. (Nov. 1); W. I. Macaulay, whilst Asst. Dir. of Vet. Services of a Div. (Feb. 1).

Temp. Lieut. to be temp. Capt.:—F. L. Clunes (Mar. 2).

Temp. Lieut. H. Walpole relinquishes his commn. on termination of his engagement (Feb. 22).

To be temp. Lieut.:—J. R. Rigby (Mar. 2).

Mar. 15.

Temp. Lieut. to be temp. Capt.:—H. W. Percy (Feb. 15).

Mar. 11.

SPECIAL RESERVE OF OFFICERS.

Lieuts. (on prob.) confirmed in rank:—C. P. Fisher, G. Lloyd, C. R. Roche, F. J. Shearman, E. J. Mulligan, R. H. Stalker.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Mar. 9.

Capt. D. Hamilton relinquishes his commn. on account of ill-health; Capt. J. C. Coleman resigns commission (March 10).

Mar. 13.

Capt. A. Spreull to be Asst. Director of Vet. Services and granted temp. rank of Major whilst holding the appointment (Jan. 5).

Wounded in the Balkans:—Pte. T. J. Thomas, 10012.

THE COUNCIL R.C.V.S. AND VOLUNTARY SUBSCRIPTIONS.

Sir,—At the last meeting of Council, Mr. Mulvey discharged an obvious duty in pointing out to the profession the serious condition of the College financially, and he gave the Council a splendid lead by putting before them the necessity for asking for voluntary subscriptions to the funds of the College. A lead they would have been well advised to follow.

Everyone who has read the periodical statements of the treasurer must be convinced that financially the College is in a very precarious condition; that it cannot continue to follow its present course without coming to disaster.

To prevent this unthinkable termination, the Council can follow either of two courses: They can economise or restrict expenditure; or they can endeavour to bring about an increase of income.

To practise economy is only warranted where there has been previously extravagance, or at least unnecessary expenditure, so that the economy will not interfere with either power or efficiency. A majority of the Council appear to favour this course, and intend to cut down the expenses until they balance with the present income.

But in the producing of this result, two things will happen: The power of the Council to watch over and maintain the interests of the profession will be weakened,

if not entirely lost; and the examinations will be less efficient tests of the fitness of the students to enter the profession, or perhaps it would be better to say, will be more open to adverse criticism as being less equitable to the students, and especially so since teachers are absolutely prohibited by the Charters from having anything to do with the examinations.

For the above reasons, I think the alternative course would be the better one to follow, viz., to endeavour to increase the present income.

So far as one can see, the Bill, which would enable this to be done compulsorily is not likely to become law for some considerable time; nor is there any good likely to result from expecting and waiting for a Government grant.

But I think a request for subscriptions, issued by the Council, would produce a sufficient amount to enable the Council to maintain the College, in all its activities, at its present level of power and efficiency.

I shall be disappointed if it is not proved by the response given to such an appeal that the majority of the members, when they receive a proper lead, have the welfare of the profession at heart.

I believe the sum subscribed would enable Council to not only perform its wonted duties more efficiently, but would enable them to undertake new ones for the good of the profession. Therefore, I think the Council should hang back no longer, but at once issue an appeal to the members of the profession for subscriptions to the funds of the College.

Should the Council see their way to do this, I for one will willingly subscribe the sum they fix on as necessary.

I am, yours truly,

P. WILSON

Lanark, 14th March.

Notice by R.C.V.S. to Motor Users.

The attention of veterinary surgeons who use motors is directed to the following correspondence which has passed between the Royal College of Veterinary Surgeons and the Ministry of Munitions as to the supply of petrol.

Veterinary surgeons who use motors for professional purposes are requested to communicate, as soon as possible, with the Secretary of the Royal College of Veterinary Surgeons, stating their motor number, and also the amount of petrol used during the year 1915.

(Copy)

ROYAL COLLEGE OF VETERINARY SURGEONS,
10, Red Lion Square, London, W.C.
March 9th, 1916.

Sir,—I notice in the press a reference to the plan formulated by the Ministry of Munitions for the control of the supply of petrol, whereby permits for a maximum amount of petrol will be issued to members of certain organisations.

On behalf of the veterinary profession, I beg to urge that veterinary surgeons who use motor cars in the course of their profession should be included in the proposed scheme.

It will be within the knowledge of the Ministry of Munitions that under the Finance (No. 2) Act, 1915, veterinary surgeons are granted the same concession with regard to the duty on petrol as is enjoyed by doctors. The Chancellor of the Exchequer in accepting the amendment for this purpose, said (Parliamentary Debates, Vol. 74, No. 103, p. 1695):—"The argument upon which the doctor was given the exemption was not that he ought to get his petrol cheaper, but that it would place him in a position to reach his patient more quickly. It was a social advantage in the relief of sickness and the saving of life that he should be induced to use a motor car rather than a horse and cart. That was the argument, and I think it is an argument which is good for the veterinary surgeon as well."

The work of veterinary surgeons in combating animal diseases in inspection of cattle, and generally in carrying out the provisions of the Contagious Diseases of Animals Acts, the Public Health Acts, etc., is of great importance to the State, and as a veterinary surgeon's practice generally covers a wide area, it has become more and more necessary that motor cars should be freely used. This is especially the case since the outbreak of war, when so large a proportion of the qualified veterinary surgeons of the country are engaged in war service. Those who are left to carry on the practice, have obviously even greater distances to cover, and the consumption of motor spirit by the individual veterinary practitioner is consequently very much greater than in normal times.

This College would be very pleased to appoint a special committee to co-operate with the other organisations, and to help in every way it can to obtain any statistics which may be necessary as to the use of petrol by veterinary surgeons. I sincerely trust that the Ministry of Munitions will be willing to accept the co-operation of this College, so that veterinary surgeons who use motor cars in the course of their profession may not be placed at a disadvantage as compared with other businesses or professions.

I am, Sir,

Your obedient Servant,

FRANK W. GARNETT President.

The Secretary, Ministry of Munitions,
Northumberland Avenue, S.W.

(Copy.)

MINISTRY OF MUNITIONS.

Room 105, Armament Buildings,

No. B.M. 2.

Whitehall, S.W.

March 14th, 1916.

The Secretary of

The Royal College of Veterinary Surgeons,
10 Red Lion Square, W. C.

Sir,—I have to acknowledge your letter to the Secretary of the Ministry of Munitions dated March 9th in reference to control of the supply of petrol.

I have to inform you that the importance of safeguarding the requirements of the Veterinary profession has at no time been lost sight of, and will be carefully kept in view in any arrangements that may be made.

The assistance of your College will doubtless be welcomed at a later stage. Meanwhile, I am to state that any information which you possess as to the number of cars at present in use by members of the Veterinary profession may be usefully sent to the Ministry.

Believe me, yours faithfully,

(Signed) M. S. AMOS.

Accident to a Motor at Maxwelltown— V.S. Appeal dismissed.

Sheriff Principal Anderson has upheld Sheriff Napier's decision in the action brought by John Baird, M.R.C.V.S., 35 Castle Street, Dumfries, against Maxwelltown Town Council, the Post Office, and a firm of contractors. Pursuer claimed from defenders joint and severally or severally the sum of £41 7s. 3d., with interest from the date of citation, with expenses, in respect of an accident which befel him while motoring along Galloway Street, Maxwelltown, on 23rd December, 1914. The Sheriff-Substitute dismissed the action and found the defenders entitled to expenses. Sheriff Anderson's interlocutor and note were in the following terms:—

Kirkcudbright, 15th February, 1916. The Sheriff having heard parties' procurators and considered the cause, refuses the appeal, affirms the interlocutor of the Sheriff-Substitute of 9th September, 1915, complained

of, finds the pursuer liable to the defenders in the expenses of the appeal and decerns, remits the cause to the Sheriff-Substitute.

(Signed) DAVID ANDERSON.

Note.—The pursuer sues three parties conjunctly and severally or severally for damages for loss and injury sustained by him through his motor car being driven into an excavation in Galloway Street, Maxwelltown, which had been opened for the purpose of laying telegraph or telephone cables, and which is alleged not to have been properly protected or lighted so as to warn the public of the danger.

The defenders sued are (1) Messrs. W. T. Henley's Telegraph Works Co., Ltd., Glasgow; (2) The Provost and Magistrates of the Burgh of Maxwelltown; and (3) The Lord Advocate as acting on behalf of the Post Office. All the defenders plead no jurisdiction, and the first question is whether that plea is well founded.

By Section 6 of the Sheriff Courts (Scotland) Act, 1907, as amended by the Sheriff Courts Act of 1913, it is provided that any action competent in the Sheriff Court may be brought within the jurisdiction of the Sheriff where there are several defenders, over each of whom a Sheriff Court has jurisdiction, where one of them resides within the jurisdiction. The question is whether any one of the defenders does so reside. It is admitted that Messrs. Henley do not, and that the Lord Advocate does not. But it is maintained that the Provost and Magistrates of the burgh of Maxwelltown who are sued as the Road Authority of the burgh "reside" within the Sheriffdom. It appears to me that by no stretch of the ordinary use of language can it be said that the Corporation as the Road Authority resides anywhere. Residence is the personal attribute of an individual, and although by the interpretation clause of the Act, "defender" includes "person," and "person" includes "company or corporation," it does not follow that all these words have the same connotation. Indeed the Act carefully distinguishes between, and treats as separate things the residence of an individual and the place of business or office of a corporation. Rule II of the schedule in dealing with citation prescribes that the proper method of citing a corporation is at its place of business or the office of its clerk or secretary. If the Act had meant to alter the ordinary use of language by providing that a corporation could have a residence within the meaning of the Act, I think it would have said so. But it has not, and I am therefore of opinion that the argument that one of the parties to this action resides within the Sheriffdom fails, and the plea of no jurisdiction falls to be sustained.

That is sufficient for the decision of the case, but I agree with the Sheriff-Substitute that the case of *Somerville v. Lord Advocate*, 20 R. 1050, is an authority for the proposition that the prerogative of the Crown exempts it from being sued in any court, to which it has not voluntarily submitted itself, but that in practice while the Crown consents to be sued in the Supreme Court, there is no jurisdiction against it in any inferior court. This action would therefore also fail in respect that Section 6 of the said Act requires, that even where one of the defenders resides in the Sheriffdom, each of the defenders must be parties over whom a Sheriff Court has jurisdiction, and that is not the case here.

I should also have considered, if necessary, that the case was not relevantly stated, in respect that, all that is said is that the excavation was not protected or lighted, without averring whose duty it was to do so, and how the duty which was neglected became incumbent upon each of the defenders or upon the one of them who was in breach.—*Dumfries and Galloway Courier*.

[This case has been referred to previously in our pages: pp. 135, 179—Sept. 18 and Oct. 16, 1915.]

The National Farmers' Union and Foot-and-Mouth Disease in Somerset.

At the annual general meeting of the National Farmers' Union held at the Hotel Cecil, London, Mr. Colin Campbell presiding, Mr. W. H. Pain brought to the notice of the Union the question of an outbreak of foot-and-mouth disease in Somerset.

On October 30th, 1915, an outbreak of foot-and-mouth disease at Rowley Farm, Butleigh, near Glastonbury, was brought to the attention of the farmer, Mr. Robert Knight. The case was diagnosed as foot-and-mouth disease. On that the police placed the farm in quarantine. Mr. Knight communicated with the Board of Agriculture and on November 2 the department sent down two of its veterinary inspectors, Fellows of the Royal College of Veterinary Surgeons. They said they were unable to certify either way, and the owner, being convinced himself that it was foot-and-mouth disease, offered to give them the cow to slaughter on the condition that if it was not foot-and-mouth disease they would give him the skin with the animal. They refused the offer. One of the Board of Agriculture's inspectors came again on November 6 and said in his opinion it was not foot-and-mouth disease. The owner was told he could do what he liked with the animal.

On the 8th he sold her and she was slaughtered on the premises, the entrails of the animal being thrown

out and devoured by pigs. Half the carcass was sent to London and people ate it, the other half was condemned at Glastonbury. Two days later twenty of the pigs developed unmistakable foot-and-mouth disease, and there followed within the next fortnight fourteen outbreaks round about there, and it cost the Government £27,000 for animals which they killed, and the farmers lost a similar amount in milking. This was followed by other outbreaks throughout the country, and they could be traced to this original case.

They had asked the Board of Agriculture for a public inquiry into the affair, but they had not received a favourable reply. It was an important matter, and it brought into strong relief that the time had come when the Board of Agriculture should be a board of agriculturists, and not politicians. He proposed a resolution to the effect that the National Farmers' Union should now press for an inquiry.

Mr. Stratton seconded, and said it looked as if the whole thing had been grossly mismanaged by the Department.

Mr. Preece said there was no doubt that an unfortunate outbreak in the Midlands could be traced to the original outbreak in Somerset. It was almost inconceivable that two Fellows of the Royal College of Veterinary Surgeons could have made such a mistake, and it would only be fair to them and their profession that the inquiry should be held.

The resolution was carried unanimously.—*Mark Lane Express, Supplement.*

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.		Outbreaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended March 11	9	14			1	1	62	136	5	102	398
Corresponding week in											
{ 1915 ...	12	12					†	†	9	59	286
{ 1914 ...	18	18			2	5	52	104	3	59	495
{ 1913 ...	20	20				3	58	117	5	37	587
Total for 11 weeks, 1916 ...	142	160	1	24	15	46	912	2276	141	893	2768
Corresponding period in											
{ 1915 ...	184	204			7	11	†	†	123	805	3329
{ 1914 ...	206	223	9	65	24	64	853	1623	122	609	5516
{ 1913 ...	147	161			35	108	875	1884	97	374	4391

† The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked :—Stafford 1.

Board of Agriculture and Fisheries, March 14, 1916

IRELAND.		Week ended March 11		Outbreaks		7		5		60	
	
Corresponding Week in		{ 1915 ...	...	...	...	...	...	11	6	33	
		{ 1914 ...	...	...	8	95	...	1	11	2	16
		{ 1913 ...	...	...	...	...	...	2	4	1	4
Total for 11 weeks, 1916		...	1	5	...	...	...	18	161	49	201
Corresponding period in		{ 1915 ...	...	...	...	...	...	10	152	53	295
		{ 1914 ...	...	...	36	516	...	26	239	46	284
		{ 1913 ...	...	...	...	...	...	68	188	37	188

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, March 13, 1916.

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1446.

MARCH 25, 1916.

VOL. XXVIII.

MORTALITY AMONGST ARMY HORSES.

On another page we print an official reply to a Parliamentary question concerning the mortality amongst army horses in England, which affords cause for gratification. This may not be so apparent to the general public, but veterinary surgeons can appreciate its significance. They know that extensive mobilisations of army horses in war time are inevitably accompanied by an amount of equine illness—some of it very serious illness—which far exceeds that of normal conditions, and they will remember it in judging the mortality returns. Keeping that in mind, the total mortality and the present excess of the death percentage over the normal one alike, can only be adjudged as highly satisfactory. The figures reflect great credit upon our Army Veterinary Service, which is doing its unobtrusive—but very important work in the war quietly and well.

THE DISCUSSIONS OF SOCIETIES.

For some little time before the war, a change was becoming evident in the discussions of our societies. The set paper on some special subject was beginning to lose its old place as the main feature of the programme; and the exhibition of post-mortem specimens, the relation and discussion of interesting cases, and the paper composed of a heterogeneous collection of the latter, were increasing in favour. The change has become much more evident during the war; and probably the increased difficulty of obtaining papers has helped to make it so. At present, it is very marked.

On the whole it is a change for the better, so long as it is not pushed too far—which it certainly has not been yet. Nothing can surpass the interest and value of the set paper, if it is really a good one. But, unless an essayist has special faculty or experience in writing, he is apt to give the text-book element undue prominence. Some essayists seem unable to steer clear of this pit-fall when writing upon one subject; but none are in danger of it when simply reporting clinical observations. For that reason, the clinical report is the paper best suited to the abilities of many members; and its popularity is not surprising. Often it forms a curious *olla podrida*, which a superficial reader might think of less scientific importance than a set paper. But it is as instructive as almost any of the latter, and much more so than most of them.

THE USES OF COLLARGOL IN CANINE PRACTICE.

Wernicke, of Berlin, after eight years extensive use of collargol, almost exclusively in canine practice, has recorded a series of very varied cases illustrating its usefulness, of which the following are a few.

A two-year-old dog was suffering from "Stuttgart disease." The dog was very emaciated, the temperature was 104.3° F., the pulse 160, and the gait was staggering. The prognosis was bad. Twenty grammes of a 2% solution of collargol were injected into the jugular. The next morning the dog moved more freely and drank milk, the temperature now being 102° F., and the pulse 120. Two days later the appetite was good, and the ulcers in the mouth had become clean. Recovery was complete in eight days.

In two similar cases the author did not obtain such surprising success, but recovery took place in from two to three weeks. In three other cases collargol failed.

The author has also tried intravenous injections of collargol in distemper, but without success.

The most brilliant results were obtained in the treatment of corneal ulcer. In more than twenty cases, a one-half per cent. solution of collargol proved itself the best of all agents the author had ever tried. All ulcers healed with only very insignificant scar formation. The otherwise usual inflammatory opacity of the cornea in the vicinity of the ulcer was wholly absent. Even when a 2% solution was used, an irritant action was never evident; the dogs did not scratch the eyes, and bandaging was never necessary.

The author describes only one of these cases in detail. In a dachshund, after apparent recovery from distemper, three ulcers the size of hempseeds, lying beside one another and covering the whole cornea from one edge to the other, suddenly appeared overnight on the right eye. Violent purulent conjunctivitis was present, with oedematous swelling of the conjunctiva. The eye was washed out every hour with a 1% solution of collargol, no bandage being applied. The next day the oedema of the conjunctiva had disappeared, and on the third day the suppuration had almost done so. On the fifth day, only a little photophobia still remained. After eight days the ulcers began to become level, and after fourteen days they were almost healed.

Latterly, the author has regularly used a one-half per cent. solution of collargol as an eye-wash in the course of distemper in breeds which are predisposed to corneal ulcers, such as toy spaniels. He believes that this prevents the formation of the ulcers.

The author speaks highly of collargol for many purposes, such as the treatment of deeply penetrating wounds of the skin and underlying tissues, and complicated fractures. But the best results it has given him have been in cases of corneal ulcer.—(*Berliner Tier. Woch.*)

OCULAR FILARIASIS IN A MULE.

The rarity of this case has led its observer, Severo Garcia, to record it. The subject was a five-year-old mule, bearing a filaria in the right eye. The filaria was perfectly visible, and was diagnosed without any difficulty.

For some time the treatment advised by Cagny and Delwort (instillation of a weak preparation of tincture of aloes into the eye twice daily) was adopted. This brought no good result—on the contrary, the eye became more turbid. Surgical extraction of the filaria was then advised, and was accepted by the owner as the sole chance of saving the eye, which was now sightless.

The animal was thrown, and the head was extended. The ocular region was washed with a 1 to 1000 aqueous solution of sublimate, and some drops of a 4% solution of cocaine were instilled into the eye. The external angle of the cornea was then incised, specially shaped sterile forceps were introduced through the incision, and the filaria was extracted.

The after treatment was simple. The eye was again washed with sublimate solution; tincture of iodine was applied twice to the wound, and the region was protected by means of dressings which had been soaked in cold—previously boiled water, applied twice daily for four days. The dressings were covered with black bandages to avoid the action of light.

In twenty days the wound cicatrised, leaving an opacity which was treated by applying red oxide of mercury ointment. Under this treatment the eye was left completely clear, and only a small cicatrix remained as a sequel of the operative incision.—(*Revista de Higiene y Sanidad Veterinaria.*)

W. R. C.

CENTRAL VETERINARY SOCIETY.

[NATIONAL V.M.A. SOUTHERN BRANCH.]

The Ordinary Monthly Meeting of the Society was held at 10 Red Lion Square, London, W.C., on Thursday, March 2nd, Mr. W. R. DAVIS, President, in the Chair.

The following Fellows signed the attendance book:—Messrs. N. Almond, J. T. Angwin, W. S. King, J. W. McIntosh, G. H. Livesey, J. F. Macdonald, W. Perryman, R. A. Philp, W. N. Thompson, A. E. Willett, Prof. G. H. Wooldridge, and Mr. Hugh A. MacCormack, Hon. Sec. Visitor: Lieut. P. Connolly, A.V.C.

On the motion of Mr. ALMOND, seconded by Mr. ANGWIN, the minutes of last meeting were taken as read, and confirmed.

Letters regretting inability to be present were received from Col. Rutherford and Mr. J. Willett.

Nomination. Mr. B. S. COCKERTON, M.R.C.V.S., of Cambridge Road, London, N.E., was nominated, and his name will come up for election at the next meeting.

SPECIMENS.

Mr. ALMOND reported a unique case of skin disease in a mare six years old, which was doing the ordinary work of a fruit merchant. She first came under his notice in the early part of November, when she developed a seborrhoeic eczema, co-extensive with the surface of the body and associated with a great deal of oedema in all the dependent parts of the body, including the limbs, and especially the under part of the abdomen, extending between the fore limbs, so much so that the skin was distinctly depressed from the exudation. It was associated with a considerable amount of tenderness. Irritation was almost entirely absent and apparently there was no itching. It first appeared about the head and neck, the muzzle and lips being covered with a sebaceous deposit, and it affected the internal parts of the ear. There was very little elevation of temperature except in the early stages, and that immediately yielded to saline febrifuges. There was no actual lameness, the animal being able to turn round with comparative freedom. In the early part of the disease there was a certain amount of catarrh. In the later treatment she was given arsenical compounds, and later on sulphur, but they did not appear to have any influence on the skin at all. Local treatment consisted in the first instance of washing the skin with a weak alkaline solution. The crusts were firmly adherent to the skin, which he had dressed with lard, and the next morning the skin was washed with a weak solution of soap, with the object of removing the crusts and giving the skin some chance of freedom of action. The disease continued into January, when the crusts were to a large extent removed by the repeated process, and he then had the skin dressed with a 2½ per cent. solution of Izal. He had not seen the animal since the middle of January, but he understood it was turned out at the beginning of February into a meadow where it could get shelter. Treatment had been discontinued, and he was told the mare was no better. He had looked up the literature on such cases and found they were sometimes incurable.

Replying to Prof. WOOLDRIDGE, Mr. ALMOND said the sebaceous material dried on the skin and formed a soapy kind of deposit, without any smell. There was loss of hair, but not to any great extent: it was really a cuticular inflammation. There was no history of strangles. He believed the animal ought, during its illness, to have been better fed than it was, but considering the diet he did not think it lost very much condition. The animal might have had an opportunity of eating decayed vegetables, and at first he thought it must be a dietetic disturbance, but he could not get any such history. She was generally bedded on straw, was perfectly healthy, and had never been in any other ownership from the time she came from Wales.

Prof. WOOLDRIDGE said his interpretation of the word "seborrhoea" was an inflammation of the sebaceous glands of the skin with excessive secretion and offensive odour, and that did not correspond with the lesions described by Mr. Almond. His own experience was that the sebaceous material was quite easy to remove from the skin with an alkali. From the description, he thought one was hardly justified in regarding the case as seborrhoea; it resembled very much the conditions he had seen in the horse which he attributed to urinous eczema, in which there was an inflamed condition of the skin with a scaly eruption which often detached with difficulty, and the skin seemed to be rather painful but not associated with marked irritation. In the majority of cases there was some urinous odour, but it was not always present. In such cases there had been generally considerable wasting. He had never had any treatment which he could claim to be quite successful, but he had had some amelioration of the condition by treating the

kidneys with urinary antiseptics, as hexamine and salicylates, and a little belladonna; paying fair attention to the food, and giving linseed mash. Nothing beyond getting the skin clean seemed to relieve it in the way of topical applications.

Mr. ALMOND said his experience of urinous eczema was that it usually came on gradually, whereas his case came on suddenly.

Prof. WOOLDRIDGE said, in the last case which came before his notice, in an eight-year-old gelding at the end of last year, the condition of the skin occurred rather suddenly, and it was ushered in with nephritis and considerable debility of the hind limbs and the more or less characteristic rolling gait, and there was albumen in the urine. It was thought by the owner that the horse had fallen down and hurt its back. It was ultimately killed because there appeared to be no hope of its recovery, and the *post-mortem* examination showed nephritis involving both kidneys, but no sign of injury to the back.

DIARRHOEA IN CATTLE.

The PRESIDENT reported a series of cases in a herd, which were unexplained. [These, with the sequel, appeared in our issue of March 18th, pp. 419-20.]

Replying to questions,

The PRESIDENT said the kohl-rabi fed to the animals outside were put through the pulper. The calves outside had malt-dust mixed with the kohl-rabi instead of cake. The animals had no power of selection of the good and the bad out of doors.

Prof. WOOLDRIDGE said it had struck him that the cattle might have had an opportunity of leaving the bad ones if they wished. The symptoms suggested that it was something that had been taken in by the mouth that was the cause of the trouble, and they corresponded very closely with the symptoms of some narcoto-irritant poisoning. In such cases, after apparent recovery there was occasional relapse. The second attacks might still be the remains of the injury that was caused by the first trouble, and the damaged roots seemed to be the most likely cause.

The PRESIDENT, replying to Mr. Almond, said the grains were of the kind they had been using for about a month, and were absolutely sweet. The animals were now being fed on mangolds. The *post-mortem* showed no marked congestion of the bowels.

Mr. ANGIN wished to mention a case which showed how difficult it was to give a diagnosis at times. He received a telegram that a cow was down, and found her in great pain, with her legs spread out behind, and groaning terribly, and he was told she had been affected for two days. The farmer said he had lost two cows on his other farm, and if this cow is going to die he would have her killed at once. She was a fat cow. On the following morning he found she had been rolling all over the place during the night, and had her slaughtered and dressed, and on opening the stomach he found tightly wedged in between the entrance to the reticulum a cloth about as big as a stable rubber, wound like a rope, which turned out to be half a sheet she had eaten off the line at the bottom of an old woman's garden. At no time did the animal become blown, as the passage from the rumen to the œsophagus was clear.

The PRESIDENT brought forward two cases of *Strongylus tetracanthus* he had had recently in two-year-old colts. Some little time ago, in *The Veterinary Record*, Captain Rees-Mogg made a communication in which he said a colt of his own wasted away almost to nothing, and he cured it by using atoxyl. He had treated two cases with atoxyl—six grains in normal salt solution intravenously every other day—but it did not seem to have the slightest effect. One of these cases was so

rapidly fatal that he was convinced nothing could have saved the animal. There was complete inappetence, uncontrollable diarrhoea, great prostration, and rapid wasting.

Prof. WOOLDRIDGE said the atoxyl treatment was recommended to Captain Rees-Mogg by Mr. J. Brown, of Invergordon. He (Prof. Wooldridge) carried through a slightly modified treatment of Captain Rees-Mogg's horse. The materials used included not only atoxyl, but oil of chenopodium and thymol, and the doses were enormous. Mr. Brown recommended 15 grains of atoxyl subcutaneously twice a day for the first week, 30 grains twice a day in the second week, 45 grains twice a day in the third week, and went up by 15 grains each week until the horse was getting a drachm and a half twice a day at the sixth week. His (Prof. Wooldridge's) supply of atoxyl would not permit of that dosage, so he gave gr. xv. b.i.d. hypodermically. He also gave ol. chenopodii ʒi. and thymol gr. xl. b.i.d. in draught throughout the course. The colt was bred by Captain Rees-Mogg, who had diagnosed worms as being present, and had the case under treatment for a week or two at the declaration of war. The horse went from the College after about a month, really fat. The thymol was administered by dissolving in spirit and mixing with milk.

The PRESIDENT said in his two cases there were myriads of worms.

Mr. LIVESEY said Mr. Almond's case of skin disease reminded him of a case brought to him once of so-called uriferous eczema in a dog. The owner said urine was exuding through the skin. There were two large lumps of fat on the sides of the lumbar region which the owner thought were the kidneys, from which urine was passing through the skin! The cause was some long hair at the end of the penis, which became wet and flapped around the flanks. When this was removed the trouble ceased.

Mr. ALMOND said he had had a case of *Tetracanthus* in a four-year-old mare. The first symptoms were noticed early in July, and the organisms began to appear during the month. He relied upon food and carbonate of iron. She was offered every kind of food in small quantities from time to time, and gradually recovered. The organisms continued to appear until the following July in varying quantities. From about September until March the quantity was very large, at least 300 or 400 a day, and he believed the last were observed at the end of June or the beginning of July in the following year.

The PRESIDENT said he gave both the colts iron and arsenic, in a drench.

Mr. ALMOND said that where medicine had to be given frequently he had a great objection to drenching if it could possibly be avoided.

Prof. WOOLDRIDGE wished to know whether anyone had used ordinary illuminating paraffin oil internally for *Sclerostoma tetracanthum*. A veterinary surgeon had told him that he had used it in several cases with very excellent results. A horse had some lice and he told the farmer to use paraffin oil to get rid of them, and when he saw the farmer again he found he had drenched the animal with half-a-pint of paraffin oil without diluting it, and with good results and no ill effect. Since then the practitioner had used it on several occasions, drenching it neat, and had obtained very good results. He (Prof. Wooldridge) had not used it himself. As to giving medicines in drenches or in food, he agreed with Mr. Almond that it was better to avoid drenching if possible, but one had to remember the effect of fluids on the horse, and the position where the parasites were mainly found. Fluids in horses were generally supposed to make their way pretty rapidly directly into the large intestine, the cæcum in particular, and that is where most of the parasites are found, and if medicine could be administered in fairly strong con

centration in fluid form there seemed to be much more hope that they would have some effect in the caecum. The greater degree of concentration advisable was more than the horse would take voluntarily, and from that point of view the method recommended by the President seemed to be perhaps the best.

Mr. ALMOND said the medicine he had given was not with the idea of injuring the parasites, but of maintaining the health the animal.

The PRESIDENT mentioned a case of senile atrophy of the bones of the skull of a dog, the bones appeared to have lost their lime salts and were like a piece of paper. The dog tumbled over if one pressed one's finger on the top of the head, because one could actually press on the brain. The animal was absolutely healthy. He did not think it affected the maxillary bones. He had seen it referred to with regard to human beings.

RINGWORM IN PET ANIMALS.

Mr. LIVESEY said that some time ago he had brought before the Society a case of ringworm in the cat with no apparent lesions, from which two households were sufferers owing to handling the animal. The case was one of *Microsporon*, and the parasite was demonstrated inside the hair of the cat, without any lesion on the skin. Recently a blue Persian cat was brought to him and he could find absolutely nothing the matter with it. It was said that two people in the house had developed spots on the wrist and neck, and they described typical cases of *Tinea circinata*. The medical man said it was not ringworm. He advised them to isolate the cat for a time and watch carefully to see what people in the house might become contaminated, so as to be sure that they had been in immediate contact with the cat.

Five or six weeks later another cat was brought to him with undoubted ringworm on the head and on the paw, and he made a note of the place where it had been bought.

Three weeks ago a local professional man brought to him a very beautiful blue Persian. There was nothing to be seen except a little hairlessness about the ears, but the hair broke when taken hold of with a pair of forceps. He said it was probably a case of ringworm, and should be kept under observation. The owner said that was very interesting, because his wife had a spot on her neck, and her doctor did not know what it was. He told him he could tell the doctor it was probably ringworm. He found the cat came from the very place where he had previously had a case of ringworm. He telephoned to the first people and found they had bought the cat from the same person. He had since heard of another household from which a cat was going to be brought to him because some people had developed little spots on the neck. It was not very difficult to say when the lesion was well developed on the skin, but when one was asked to simply say whether a cat was all right or not, it was well to ask a few questions and find the reason why it had been sent, because he was quite sure the *microsporon*s were very much more common than was thought.

Prof. WOOLDRIDGE said Mr. Livesey's case was of very great interest. The transmission of skin diseases from animals to man was a matter of great importance. Recently a man brought a young "Pom." to him with loss of hair on the face, scratching, and the conditions which one associated with sarcoptic mange. He had no difficulty in demonstrating the parasite. The owner said he had a lot of spots on his forearms and he exhibited a number of quite typical spots. They began like tiny little vesicles which did not last very long, because they were so irritating that the patient scratched until the vesicles were ruptured. He also had them on the chest and legs. He said that at the hospital they told him he had blood poisoning. He (Prof. Wooldridge)

told him that he had contracted the condition from the dog. Subsequently, the man informed him that he had applied the same dressings which had been given him for the dog and was now all right. Some assistance could be got in the case of dogs by enquiring of the owners whether they had any spots themselves. He could instance numerous similar cases. Fortunately the parasites could not breed on the human subject and spontaneous recovery occurred, and this could be accelerated by simple treatment.

Mr. MACCORMACK said, when at St. Leonard's-on-Sea, a lady brought a Persian kitten to him with some stomach derangement, and after prescribing for the cat he noticed on the lady's cheek what appeared to be ringworm, but which she said the doctor told her was a little skin irritation. He told her that she had contracted ringworm from the cat, and after a while the cat showed typical symptoms of ringworm, and gave it to all the family of the house. When he first saw the cat there was no skin lesion, only the hair broke off very easily.

The PRESIDENT said he had had six cases of Psoroptic mange in cows within the last fortnight through a man buying a cow and turning it out with others. In one cow the disease was on the back and on both flanks, which were absolutely raw where the animal had been scratching itself. He found numerous examples of the parasite.

Mr. LIVESEY said with regard to the transmission of psoroptic mange from the dog to human beings he found it to be quite well established. He had known one lady who was practically covered with it. She had three Pomeranians suffering from it, and as the dogs all slept on her bed it was not unreasonable she should contract the disease. She got rid of it quite quickly with sulphur lotion. Symbiotic mange in the dog and in the was by no means confined to the ear.

Sometime ago Mr. MacCormack, supplementing some remarks he had made on a case, pointed out the necessity when treating the ears for symbiotic mange to treat the whole of the head, and since then he had frequently found the little insects on the skin as far back as between the shoulder blades. If the animal could be washed and kept scrupulously clean, the simple dusting of ordinary milk of sulphur into the ear would cure it. He did not believe the acari bred on the skin, but bred in the ear and wandered on to the skin. He found them also associated with mange in the cat, and had isolated the mange parasite and canker parasite in the same scraping.

Prof. WOOLDRIDGE thought the hind feet should be also attended to, and the inside of the fore feet should not be overlooked. Nocard's treatment was: Naphthol beta one part, Ether three parts, and Olive oil ten parts, one or two minims to be dropped into the ear once daily, and a small plug of cotton wool to be held in the ears for a few minutes to allow the ether to dissolve the secretions and permit the naphthol to come into closer contact with the parasites. He had used it pretty extensively and it was very effective.

A paper on "The Significance of Vomiting in Animal," by the President, was postponed to the next meeting.

A vote of thanks to those who had brought forward cases, and to the President, having been passed, the meeting adjourned.

HUGH A. MACCORMACK, Hon. Sec.

A dairy cow sold at Limerick the other week had only three teats in her udder; the two forward as usual and one at the back about centreways in the udder, there being no trace of a fourth. She was, nevertheless, a very good milker, and was kept for four years in the bawn.

THE VETERINARY MEDICAL ASSOCIATION OF IRELAND.

[NATIONAL V.M.A. IRISH BRANCH.]

A General Meeting was held on Friday evening 26th November, 1915, in the Gresham Hotel, Upper Sackville Street, Dublin, Mr. Watson, President, in the Chair. There were also present: Messrs. F. J. Daly, P. F. Dolan, J. Doyle, J. B. Dunlop, P. J. Howard, J. F. Healey, F. A. Heney, J. Holland, L. M. Magee, O. D. Neary, J. H. Norris, Prof. O'Connor, Hon. Sec., and Prof. Craig, Hon. Treasurer.

There being no objection, the minutes of the previous meeting, which had been circulated, were signed by the President.

The Hon. Sec. read letters apologising for inability to attend, from Messrs. Hamilton, and Nolans.

Mr. NORRIS apologised for the non-attendance of Mr. Prentice, who he stated had been ill.

CORRESPONDENCE.

A letter was read from the Royal College of Veterinary Surgeons requesting subscriptions from the members and the Association toward a fund for the relief of veterinary surgeons on the Continent whose practices had been destroyed by the war.

The PRESIDENT mentioned that the subject had been discussed by the Council, and on his suggestion it was agreed that the matter be considered with the Council's minutes.

Correspondence was read from the Master Farriers' Association, asking for deputation from V.M.A.I. to meet them in consultation on the increased cost of shoeing.

The PRESIDENT: This is a subject exclusively for the Dublin practitioners.

Mr. DOYLE was strongly of the opinion that a small deputation from the V.M.A.I. should meet the farriers on the subject.

Mr. HOWARD said that the matter was a purely business one, which did not concern the V.M.A.I., and on Mr. Doyle's suggestion being put to the meeting it was negatived, Mr. Doyle being the only supporter.

A letter was read from Mr. McLean, Belfast, resigning membership of the Association.

The resignation was accepted with regret.

Mr. HOLLAND: We should record our admiration for the nice way in which he has resigned.

REPORT OF COUNCIL.

Two meetings of the Council of the Veterinary Medical Association were held, on the 6th August and 12th November, 1915.

At the former of these meetings the Treasurer made a statement, which was read and noted. Accounts for printing, etc., were passed for payment.

It was decided that owing to the war the meeting should not be held in August.

At the second meeting of Council a letter was read from the Anglo-Franco-Belgian Veterinary Relief Fund requesting the support of the Association and a subscription to the Fund. The Council recommend that the Association give a subscription of £5 5s. for the year 1915, and suggest that a fund be started and that all members of the Association be requested to contribute the minimum sum of 5s. to the Fund. These subscriptions to be sent through the Veterinary Medical Association.

Letters received from the Dublin Master Farriers' Association were read, with reference to the increased cost of horse shoeing. It was directed that these letters be brought before the general meeting.

A letter was received from Mr. Heney with reference to a case of cruelty against Mr. McDonald, who was

said to be practising as a veterinary surgeon. Prof. Craig reported that after consultation with the President he sent the newspaper cutting, enclosed by Mr. Heney, to the Royal College of Veterinary Surgeons, who replied to the effect that as there was no direct evidence it would be wisest to ignore the matter.

H. & W. Brown's account for printing was passed for payment.

The following candidates were proposed for membership:—Mr. J. V. MAHONY, proposed Mr. P. B. J. Mahony, seconded by Mr. J. H. Norris; Mr. T. G. BROWNE, proposed by Prof. O'Connor, seconded by Prof. Craig.

It was arranged that the general meeting be held in the Gresham Hotel, on the 26th inst., and that the paper by Mr. Norris, on "Contagious Bovine Abortion," be printed, and circulated with the notice convening the meeting.

It is suggested by the Council to the General Meeting that special votes of thanks should be passed to those Members of Parliament who interested themselves and helped to secure for veterinary practitioners the rebate on the Petrol Tax. The Council also recommend that arrangements should be made for the presentation of the Diploma of Honorary Associateship to Mr. McKenny, this to take place possibly at the annual general meeting.

The PRESIDENT said the first matter that came up for consideration was the Anglo-Franco Belgian Veterinary Relief Fund. There was some discussion between the members of the Council as to whether the subscription should be 5s. or 10s. each. The opinion was expressed that if it was left at 5s. it would result in raising a larger sum than if it were fixed at 10s. each, or more.

Mr. DUNLOP: I think it ought to be 5s. and members can give as much as they like after that.

Mr. MAGEE agreed.

The PRESIDENT: There was also a suggestion that as it was such a worthy object the Association should give a subscription of five guineas towards it as a body.

Mr. MAGEE: We ought to have the treasurer's opinion on that. We have seldom a more deserving object before us. If we do not help our brother practitioners who are in such awful distress we will never help anyone.

Mr. NORRIS: The subscription of five guineas is to be for this year only. We may ask for another in 1916?

Mr. MAGEE: The Hon. Treasurer can tell us if we can afford to make it ten pounds. This Association has given the lead in a great many ways to Associations throughout the three kingdoms, and for that reason I would not like to see our Association behind any of our fellow Associations on the other side in these matters. It may be years before a good many of these men can practise again, and many of them, perhaps, with their wives and families are starving. It is the most deserving cause we have had before us for a long time.

HON. TREASURER (Prof. Craig): I am aware that it is a very worthy cause; at the same time we have to keep our Association above water. The subscriptions that have been handed in this year amount to a sum which has been swallowed up by expenses. The balance left over last year was £30 odd. If you consider we ought to give more it is for you to decide.

Mr. MAGEE: I propose now that we give ten pounds. There is no country in the world less affected by the war than this, and no veterinary surgeons less affected by the war than the veterinary surgeons in this country. (Hear, hear).

Prof. O'CONNOR seconded the motion.

Mr. MAGEE's motion was then put to the meeting and carried unanimously, and it was further resolved

that a circular letter be sent to the members of the Association requesting their support.

Mr. HENEY said he had to apologise for being late, and for being absent from the Council meeting. He inquired if the Chairman had ruled on the subject of the report dealt with by the Council relative to the condition by a Dublin divisional magistrate of a Mr. McDonald for cruelty to a dog.

The PRESIDENT: I have had the paragraph read to give you an opportunity of speaking on the point. I know you are interested in it.

Mr. HENEY: I am not the only one interested in this matter. In the first place, I think when I sent my letter to the Council of the Veterinary Medical Association action ought to have been taken immediately. My intention was that a letter should be sent to the newspapers denying that this man had any right to operate in a professional manner as evidence was given that he could operate. I think if such letter had been sent to the press at the time the public would have understood the position we veterinary surgeons take in this matter, and think that even at this late moment—two or three months after—we should do something to deny the statement that was made in the police court. I have been speaking to the gentleman—Mr. Phillipson—(I wish to mention his name before the stenographer) who gave evidence there. I think we ought to do something now, even at this late moment, denying the statements that were made in the police court.

Mr. HEALY: I think you should enlighten some members as to the occurrence.

The PRESIDENT: A man named McDonald was taken up for cruelly beating a dog in the street. I forget what the sentence of the court was, but the man was sentenced to a period of imprisonment. Then there was an appeal against the decision of the magistrate and some people turned up to give this man a character and reasons why he should not be sent to jail. One of these, a lay person, stated that Mr. McDonald was very skilled in treating dogs. This statement might possibly imply that McDonald was a veterinary surgeon.

Mr. DOYLE: Am I right in saying that he had something to do with the Dogs' Home? I have found him up against myself. I was asked to go in consultation with him, but I refused.

Mr. HENEY: I refused to take the position of Hon. Veterinary Surgeon of the Dogs' Home because he was connected with the Cats' Home.

Mr. DOYLE: I think it is a matter which should be brought before the Society for the Prevention of Cruelty to Animals.

The PRESIDENT: I was a member of the Society for the Prevention of Cruelty to Animals, and I can emphatically state that it is untrue that Mr. McDonald held any professional appointment in connection with the Dogs' or Cats' Home. He was in the entourage of of Miss Swift. He certainly held no professional appointment. He was adviser to Miss Swift.

Mr. MAGEE: Miss Swift was a great benefactress of the Home, and there was great friction between her and the Society. Miss Swift brought in a whole lot of people, and Mr. McDonald was amongst the clique. He had no appointment, neither did he receive any stipend. I think that the best course would be to drop the matter. To do what Mr. Heney suggests—to write to the press—would be only giving Mr. McDonald a free advertisement if he is ever able to practise again. Let it fizzle out.

The PRESIDENT: I take it that the meeting is satisfied with the action of the Council in this matter?

The members present signified their agreement.

Mr. HENEY: Take me as dissenting, Sir.

The following candidates for membership were unanimously elected members of the Association:—Mr. J. V. MAHONY, Templemore, Co. Tipperary, proposed by Mr. B. P. J. Mahony, seconded by Mr. J. H. Norris; Mr. T. G. BROWNE, R.V.C.I., Dublin, proposed by Prof. J. J. O'Connor, seconded by Prof. J. F. Craig; Mr. NEARY, Ardee, proposed by Mr. Howard, and seconded by Mr. Holland; Mr. F. DALY, Swords, proposed by Mr. Magee, and seconded by Prof. Craig.

Prof. O'CONNOR: The Association, as you are aware, gives a medal each year to the candidate who obtains first place at the final professional examination in Ireland in July. This year it was won by Mr. Tunney, but we have not a medal to give him, so that it will be necessary to order one.

The PRESIDENT: I suppose you will leave this in the hands of the Council? (This suggestion was adopted.)

CONTAGIOUS BOVINE ABORTION : A REVIEW.

By J. H. NORRIS, M.R.C.V.S., Dublin.

Contagious Bovine Abortion is of great and increasing interest to veterinarians. It is a rather complex subject, a single phase of which would provide ample material for a prolonged discussion. On this occasion, however, it is only intended to briefly review it from a practical aspect. Its national importance is vividly reflected in our present laws enacted to protect and conserve the lives of pregnant cows and young calves, while with the individual stock-owner's interest it wages a ceaseless and destructive warfare which is probably only exceeded by the plague of tuberculosis. In short, it is a problem which has long and loudly called for solution; and the time is not inopportune for us, as a Veterinary Association, to take stock of what has already been achieved, and discuss the prospects of further amelioration.

The disease is known to us since the dawn of veterinary science; during the early half of last century the question of its contagiousness was the subject of sustained controversy, but it was not until the late seventies that this point was definitely settled by introducing discharges from aborted cows into the vagina of healthy cows, and thereby producing artificial abortion. Further investigation was made by Nocard in France (1885), and by the Highland and Agricultural Society in Scotland (1889) without producing any important results. In 1896 Bang and Stribolt began in Denmark an investigation which resulted in proving the causal organism to be a small bacillus which sets up a specific catarrh in the pregnant uterus. This discovery was an epoch-making event in the history of abortion, and laid the necessary foundation for further work, which was continued by Bang, and led, among other things, to the discovery that infection could readily take place through the alimentary canal, and illustrated the possibility of producing immunity by vaccination. In 1909 a Departmental Committee of the Board of Agriculture and Fisheries appointed to enquire into Epizootic Abortion, reported the result of their labours, which extended over four years. The scientific work of this investigation was carried out by M'Fadyean and Stockman; it confirmed the previous work of Bang with regard to the causal organism, and made important discoveries with regard to its cultivation *in vitro*. They (M'Fadyean and Stockman) introduced serological and other tests for diagnosis, and evolved a workable method of vaccination. There is no doubt the work of this committee will have important and far-reaching effects. In 1911 Schröder and Cotton, of the American Bureau of Agriculture, found the abortion bacillus to be a fairly common organism in milk. The significance of this will be discussed later.

Such then, is a very brief outline of what has already been achieved by scientific investigation. Let us now consider what influence it has on the practical work of controlling epizootic abortion.

The first duty of the veterinarian in dealing with an outbreak is to make sure of his diagnosis. In many instances this he can readily do from clinical data alone. In others the clinical evidence may not be sufficient to build upon. In either case steps should be taken to confirm the clinical opinion by demonstrating the presence of infection by the *Abortus bacillus*. This may be done by any of the following methods:—

- I. Microscopical examination of lesions, uterine discharge, or contents of foetal stomach in some cases.
- II. Cultural and biological tests.
- III. Agglutination test with blood serum, uterine exudate, and milk whey.
- IV. Complement fixation.
- V. Application of a preparation, "Abortin," made and used on the same lines as tuberculin.

While Bang's bacillus has nearly always been found as the cause of Bovine abortion, cases have occurred which were due to other organisms; a bacillus of the Coli group (Moussu), *Bacillus pyogenes* (Holth), *Vibrio** of M'Fadyean and Stockman (Report on Sheep Abortion).

Probably the agglutination test will be found the best of these methods for general use to establish a definite diagnosis. It has the advantage over the microscopic, cultural and biological tests that it can be applied at any time, whereas the others are limited, more or less, to animals with uterine discharges. Complement fixation has given results similar to agglutination; it is, however, only suitable for laboratories, where a considerable number of tests are carried out once or twice a week. It is too elaborate to apply as an occasional test.

The "Abortin" test has given unsatisfactory results. In any case the trouble of taking temperatures associated with it is sufficient to make it give way to a serological test. The agglutination test was introduced by M'Fadyean and Stockman, who found, after a large number of tests, that a serum which completely agglutinated in a dilution of one in fifty or above came from an infected animal. This has since been confirmed by workers in other countries.

Having established the existence of contagious abortion in a herd, the veterinarian can make many useful suggestions as to how to deal with it. By the application of the agglutination test the clean herd can be kept clean, and in a contaminated herd the affected and non-affected animals can be definitely located. It should, however, be carefully borne in mind that the agglutination test only differentiates between *infection* and *non-infection*, it does not indicate the age or severity of the infection. A cow which reacts may not abort, and again a reactor may be an immune and harmless animal. The test is therefore not one of simple interpretation, and requires experience to make the most of it. All bovines, including bulls, should be tested.

As a result of the test the herd may for the purpose of further consideration be divided into three groups—(a) Non-reactors. (b) Reactors (pregnant). (c) Reactors (non-pregnant).

Group (a) should be isolated as far as convenient, and tested again a second time, about three weeks later, in order to discover any latent cases which passed through the first test. Animals which pass the second test may be mated with a clean bull and breeding continued if there is reason to believe they will not be exposed to

risks of infection. If, however, such risks are prominent, the question of vaccinating them as a prophylactic remedy should be considered.

Animals in Group (b) are harmless so long as they are not in a condition to shed infection. They should be kept under close observation, and on the appearance of any signs of abortion, steps should be taken at once to prevent spread of infection before and after the act. A special watch should be kept for abortions in early pregnancy, which too often escape notice. Aborters should pass into Group (c), and animals which calve normally, and whose uterine discharges have been found free from infection may pass into Group (a).

Little or nothing can be done in the way of treatment of infected pregnant animals. Vaccination with a killed culture has been tried and found unsatisfactory. Medicinal treatment with a prolonged course of carbolic acid has an established reputation among agriculturists; but this drug has failed when applied experimentally to known infected animals. Probably its reputation is based on a number of apparently satisfactory results and illogical deductions.

Group (c) will probably be found the largest and most important from a veterinary point of view, containing, in many herds, a high percentage of sterile animals. It is a noteworthy fact that contagious abortion and sterility hang closely together as cause and effect. For convenience animals in this Group may be classified for treatment thus—

(1) Reactors whose reproductive organs are found upon examination to be normal. These might be passed on to Group (a) and receive the same treatment.

(2) Recent aborters with discharge and probably retained foetal membranes.

The uterus in these animals is always in a state of catarrh, which although primarily due to *Abortus bacilli*, is often prolonged and intensified after abortion by Coli bacilli and *Streptococci* infections. These secondary infections are often more harmful in results than the abortion infection itself, and appear occasionally to produce such a condition of irregular breeding as to lead the owner to think he is dealing with a disease quite distinct from ordinary abortion.

Treatment in recent aborters should be directed towards clearing the uterine cavity of infection, and bringing it as rapidly as possible to its normal condition. This is probably best done by removing any retained foetal membranes and washing out the uterus thoroughly with normal saline solution, or a mild antiseptic solution. When the uterus has contracted somewhat the operation of examination and treatment is greatly facilitated by putting back the uterus into the pelvis, fixing it there by forceps inserted into the os uteri, and massaging the organ through the rectum. *This method of retracting and fixing the uterus appears necessary if one is to make a thorough examination and effectually apply treatment.* The method was demonstrated to the writer by Mr. Albrechtsen, Veterinary Surgeon, Copenhagen, who specialises in bovine uterine work. In a large percentage of cases, by careful, and, if need be, sustained treatment on above lines, the uterus will gradually return to normal in a comparatively short time. If treatment is neglected, a percentage, and in some herds a high percentage, of animals will become unfertile for a time, coming in oestrus at irregular intervals, according to the uterine condition. Some of these cases "cure themselves" after varying periods, and become regular breeders again. In other, the catarrh set up by the abortion and maintained by the deadly secondary infections, persists in a chronic form with little or no discharge, leading to thickening of the uterine walls, destruction of the mucous membrane, and absolute sterility. It is not intended to convey that every case of sterility is brought about in this way; the

*The writer found one such case in Ireland. It may be of interest to note that this animal was vaccinated, shortly after aborting, with a living culture of Bang's bacillus, and gave a severe anaphylactic reaction. She calved normally next pregnancy.

important point to bear in mind is the close association of abortion and sterility.

With the aborters whose reproductory organs have assumed a normal condition, there is ample evidence to show that many of these cases will conceive again at first service and produce a healthy calf at full time. When a second abortion occurs it may originate from a focus of infection remaining in the uterus from last pregnancy, or from a second infection, but on the whole the former seems the most likely, as the immunity set up by the first abortion would probably be strong enough to overpower any accidental infection picked up, but would not have sufficient potency to arrest a recrudescence in the pregnant uterus. In such cases a vaccine might be useful to exalt and provoke the existing naturally acquired immunity.

(3) In any fairly large herd where abortion has existed for a time a number of barren cows will be found.

Sir Stewart Stockman's statistics on results of vaccination experiments are unfortunately lacking in accurate detail as to the sterility figure met with in infected herds. It is mentioned in a detailed analysis of 46 cases which previously aborted, that 18 animals or 27 per cent. dropped out of the immunisation experiments owing to "death, barrenness or sale." We cannot accurately fix the sterility figure here, but in a lot of 121 heifers in the same group only nine animals, or 7.4 per cent., were deleted for similar causes, a result which tends to show the sterility figure in the aborted cows was important. The history of these sterilised animals may reveal a clear act of abortion as the primary trouble, or on the other hand the animals may have never been known to abort. It is, however, most likely the latter animals were also infected, but escaped attention by aborting very early or very late in pregnancy, or indeed, some may have carried their calves full time and still be infected.

The period of sterility may vary from a few months to a few years. In the latter cases a condition of absolute sterility will probably be established. The uterus will be found with hard thickened walls, open os uteri, and mucous membrane in a state of chronic catarrh. A condition of pyometritis may also be found. Treatment of some of these cases is useless, as the uterine mucous membrane is completely disorganised. In less chronic cases treatment, although hopeful, is tedious. Each case should be carefully examined and treated on its merits.

VACCINATION.

For the production of artificial immunity vaccination has now had a fairly extensive trial. It may be used to strengthen an already existing naturally acquired immunity, or to set up immunity in clean animals which might be exposed to risks of infection. The vaccine found most efficient is a massive dose (no standard) of living Abortion bacilli, injected subcutaneously (M'Fadyean and Stockman method). Only non-pregnant animals are thus vaccinated, and they are not served by the bull for a period of six weeks or two months afterwards. The result of a large number of experiments in immunisation carried out in infected herds has recently been published by Sir S. Stockman (*vide* Report of International Congress, 1914). In a total of 493 animals vaccinated with living bacilli, 6.5 per cent. only aborted, while 23.3 per cent. of abortions occurred in 432 control animals. In another lot of seven herds totalling about 400 animals the abortion figure was reduced in the year 1913-14 to 5 per cent. from the average of 15.6 per cent. for the previous five years. In a further detailed analysis of these results it is shown that of previously aborted cows only 6.4 per cent. of those vaccinated as against 66.6 per cent. of controls aborted a second time. This is an excellent result so far as it goes, but the number of animals (37) employed was small, six

only being used as controls. Generally speaking, it may be said the results so far show a decided, but not striking tendency in favour of vaccination. It should, however, be used intelligently—a warning necessary in these days when Vaccine Therapy appears to be accountable for a good deal of promiscuous quackery of a pedantic type.

It has been amply proved that abortion is readily produced by infectious material taken in by the mouth, and it appears probable that this is the commonest method of spread. The risk of infection by the bull, while it is quite possible, has probably been exaggerated in the past. The bacillus of abortion does not lead a saprophytic life, but is able to sustain its vitality for several months outside the body. Bearing in mind the easy way in which infection can be set up by ingestion, and the viability of the bacillus, it is obviously very bad business to allow pastures and food material to become contaminated. Everything possible should be done to limit the area of contamination by a rigid system of disinfection of infected premises and pastures. Animals likely to abort, and those discharging, should be confined to stables to prevent fouling of pastures. Infected animals are not dangerous so long as they are not discharging, and this fact can be utilised to suit the convenience and circumstances of farms where methods of control are adopted. The possibility of infection being carried by milk also arises. It would be quite easy to paint a lurid picture of the evil consequences likely to arise both to public health and cattle breeding by milk-borne infection. The point is a comparatively new one, and it seems sufficient for the present to accept it in the light of past experience and await the result of further research.

On the whole there appears to be no necessity to enforce a strict quarantine between infected and non-infected groups to ensure success.

The practising veterinarian engaged in this work should be in touch with a laboratory where he could have his serological tests carried out, discharges examined, and vaccine supplied at a nominal price. Such an institution appears to be a *sine qua non*.

The sterility following in the wake of abortion is often the cause of greater financial loss than the primary abortion, and any remedy which ignores it cannot be called effectual. In this respect uterine surgery becomes of great significance. It forms a branch of veterinary work in which the practitioner might do well to specialise, and in which veterinary schools might impart far better practical instruction.

Surveying the economic aspect of this subject, one must be struck with the great financial loss which abortion and its consequences inflict upon an Irish industry, the export branch of which is worth over a million sterling per month, and the absence of any attempt to remedy it by a plan of organised attack. Our profession should be foremost in such an attempt, but only too often the stockowner and the practitioner fail to see it is to their mutual advantage to attack such problems by a method of systematic endeavour where the work and the fees are spread over a considerable period. We have now a sufficient scientific knowledge of contagious abortion to apply it with good effect, but the work must be done in a systematic, not spasmodic, manner. A casual visit or opinion from the veterinary surgeon will not have much effect. The stockowner would find it true economy, and the practitioner good business to arrange an annual fee for the work of looking after the breeding condition of the herd. In this way the work of eradication and treatment could be gradually and carefully pushed on, and any abnormal conditions discovered and dealt with in their early stages, our goal being the highest possible fertility figure.

DISCUSSION.

The PRESIDENT: The paper by Mr. Norris has been circulated. You will notice that he refers to it as a Review. That I assume is intended to convey that it is a review and not an exhaustive treatise on the subject. There are many lacunæ in the paper, and I take it that he deliberately left these in order to promote discussion. The subject is one which must commend itself to all practitioners and members of the profession in Ireland, whether in practice or not. Mr. Norris has dealt with that fashionable substance known as serum. There is scarcely a disease for which the bacteriologist does not suggest serum treatment. By-and-bye I should not wonder if they made out sera that would cure sand-crack and seedy toe, I don't know of any other disease it might not be made out to cure. My own view is that medicaments practically applied are really a success. A good many years ago—referring to human practice—there was a drug, *Viburnum prunifolium*, which was regarded as a specific. It absolutely could not, it was thought, fail. I do not know the position that drug holds in popular practice to-day. I think that in treating aborters an injection of Permanganate of potash, Peroxide of hydrogen, or Carbolic acid would be more effective than these sera. Mr. Cleary, of Mullingar, had a valuable thoroughbred mare that would not carry foal for two or three years. He injected the uterus with pure Carbolic acid. It most effectively cured the mare, and she carried a foal two or three months afterwards.

Mr. HEALY: Carbolic acid is rather hot stuff. I should not like to do it.

The PRESIDENT: Mr. Norris is well known to you all, and no one in the profession has a higher record. He requires no introduction, and I will now ask some gentleman to open the discussion.

Mr. NORRIS exhibited a series of instruments used by a Danish veterinary expert in the examination and treatment of the uterus. He explained that when the uterus has contracted the examination and treatment are greatly facilitated by putting back the uterus into the pelvis, fixing it there by forceps inserted into the os uteri, and massaging the organ through the rectum.

Mr. HOWARD: Gentlemen, we have reason to be grateful to Mr. Norris for bringing before the Association a subject of real national importance. (Hear, hear). I hope Mr. Norris will not be offended if I say that somehow or other he does not seem to have brought us, as the Yankees say, "much forrarder." We must only hope that while Mr. Norris on the quiet conducts his investigations, we may, in the very near future, be able to get from him more information and statistics that will help to put us on the road towards getting rid of this plague. Somehow or other the Irish farmer has not been held up at any time as a model of progress, or a person who could be looked upon as a storehouse of information; at the same time he is not such a dummy as some people might take him to be. Around the west of Ireland the farmers are generally of opinion that contagious abortion has spread immensely since—in fact they did not look upon abortion as contagious until the advent of the premium bull. I do not wish to take away from the advisability of propagating the premium bull. There would be a great deal of reason for thinking that the premium bull has been responsible for carrying the disease, but whether he has managed to spread the disease on the pastures on which he has been fed is a matter for debate. The fact remains that in districts in which the disease was practically unknown—unknown as contagious abortion, cases would be considered as accidents, and not as the contagious form until the present steps for propagating the better class of cattle were taken through the

medium of the imported bull. Another thing is fairly well proved in the opinion of a great many Irish farmers, and that is that the disease seems to exhaust or eradicate itself. It does not necessarily follow that if a cow suffers from contagious abortion this year, she will abort next year, or all her life. It is proved that about twice is the most she will abort if you get her into ordinary health, without any radical treatment of the uterus.

The PRESIDENT: Or Sera.

Mr. HOWARD: I have the greatest possible respect for sera. If you have normal conditions the disease seems to exhaust itself after one or two seasons. That however would be no reason why attention should only be paid to it for one season. The matter is too serious not to pay attention to it. It is well known that the germs which are supposed to be responsible for the production of this disease can be found even in bullocks, so that we are up against a stiff problem, if we are able to deal with them at all, inasmuch as we would have to be examining almost all the cattle on a farm, whether male or female, if you want to deal seriously with the stamping out of the disease by means of the serum treatment. I have seen the agglutination test applied with good results, but where you have a large number of cattle the question is—would it be worth while to apply that test?

In America they have a form of treatment that I do not think Mr. Norris has mentioned, that is with the change of food and the use of methylene blue. From the statistics of the American Veterinary Association and well known authorities it appears that the treatment has been very effectively applied. The treatment extends over four or five months, and is very expensive.

I would like that members of the profession where they have outbreaks of the disease would adopt the agglutination test. It is not a very troublesome matter. I know the Veterinary College is anxious that anybody will send blood for the agglutination test without any expense to the veterinary surgeon who sends it. I think we have been a little too prone to condemn some of the measures that have been adopted in cleaning out the uterus and taking protective steps in cleaning the penis of the bull. We should not be too quick to drop the idea that for a long time prevailed that the bull was responsible for spreading the disease. There is at least evidence that where steps have been taken to cleanse the bull and keep him from coming in contact with aborting cows, the cows have done at least better than they did before. I only have to thank Mr. Norris for bringing forward the paper and to express the hope that he will in the near future have solved the difficulty of eradicating this trouble which causes such loss to the country.

Prof. CRAIG: I think the best thanks of the meeting are due to Mr. Norris for bringing such an important subject before the Association for discussion. Mr. Norris has confined his attention chiefly to diagnosis and treatment, the questions of most interest to the practitioner, and has not laboured the point he raised.

It is important before considering treatment by vaccine to settle the question of diagnosis. We usually take it that in the majority of cases abortion is contagious when several animals abort in quick succession. But it has to be remembered that although most of the cases of contagious abortion in cows are due to the abortion bacillus, a few have been found to be caused by other organisms—vibrio, colon organisms, bacillus pyogenes. One must therefore proceed to ascertain the cause as suggested in paragraph 4 of the paper, according to the material available. The nature of the vaginal discharge may be noted—it is profuse, brownish or chocolate coloured, and thick. The foetal membranes may present necrotic-looking yellow cotyledons, with small

flakes or granules attached to the neighbouring portions of the chorion. Where the discharge or the foetal membranes can be obtained in the fresh condition, a microscopic examination of films from these materials is often useful. The abortion bacilli may be found in little clumps.

The most useful test which can be applied to ascertain whether a cow is affected with contagious abortion due to Bang's bacilli is the serum agglutination test. It may be used not only after, but before abortion with success, and thus may be of service in detecting potentially dangerous animals before they have aborted. The blood is here used for the purpose, and in obtaining the blood with this object practitioners ought to take a reasonable amount of precaution to prevent contamination. Milk has been used, but cannot always be obtained and is not so useful; the reaction is not so easily made out, and our knowledge of it is not yet sufficiently definite.

Mr. Norris refers to a case of abortion in a cow due to a vibrio which he treated with a living culture of Bang's bacillus. I wonder why he used this vaccine at all there, it did not appear to be indicated. We take it that vaccines are specific in their action as a rule, and can only be of service in disease due to the organisms from which they have been prepared. That is the reason for the care in diagnosis before beginning vaccine treatment.

In referring to the application of the agglutination test in a herd, Mr. Norris suggests that all bovines, including bulls, should be tested. The testing of bulls brings up an important question. Is the transference of the disease by the bull other than a purely mechanical process? We know that of recent years the tendency is to ascribe a very minor rôle to the natural methods of infection. Without desiring in any way to minimise the danger of infection by ingestion, I think the premium bull, or bull used for several herds, must remain suspect. The negative results of the experiments carried out by the departmental committee on contagious abortion are not conclusive; the heifers that had aborted and were used in the experiments had apparently recovered from the disease, the vaginal discharge had entirely ceased. Up to the present, it has been thought that the bull transfers the disease only in a mechanical way. Is it not possible that the bull itself may become infected—the organisms may propagate in some portion of the urino-genital tract, and that they may be discharged with the semen? That question can only be settled by experiment and examination of the semen of bulls which react to the serum agglutination test. In the meantime it would be wise to exclude such reactors from service in a clean herd.

Mr. Norris again remarks, about the middle of his paper—When a second abortion occurs, it may originate from a focus of infection remaining in the uterus from the last pregnancy. I would like to know what evidence he has for this statement. On account of the absence of such foci in their experimental animals the departmental committee concluded that "it is highly improbable that abortion bacilli remain for a long time active in the bodies of non-pregnant animals." This has some bearing on the treatment of cows which have aborted. We have not only to destroy the foetus and foetal membranes, and disinfect the discharges and contaminated ground—a very difficult matter to arrange where the cow aborts in the field—but also disinfect the uterus and vagina. The object of the antiseptic irrigation is to facilitate the removal of infective material in the uterus and vagina, and to render it harmless. The irrigation of the uterus may be carried out without much trouble for a few days, but when the os uteri closes the process is not likely to be satisfactory as usually employed. Perhaps the apparatus and methods of Albrechsten

might be useful here. At the present time, after the os uteri closes, the irrigations are confined to the vagina, the idea being that the uterus will gradually get rid of the infective discharge, and this latter will be mixed with the antiseptic in the vagina and rendered innocuous.

As to sterility following abortion, Mr. Norris seems to think that contagious abortion will, of itself, cause such a condition of the uterus that the cow will be unable to conceive, or if it does conceive, it will abort again in a very short time. According to the investigations of Sven Wall, the serious changes which occur in the uterus after abortion are due to secondary infection. That is certainly a very good reason for antiseptic injections of the uterus and vagina after abortion—to wash out such organisms with the discharge and render them sterile. If the secondary infection has been acting for some time before treatment is carried out, success is not very certain. Albrechsten's method might be tried in some of these cases. It is, however, not likely to avail much if the character of the mucous membrane has undergone marked change, and the epithelium of the uterus become of the squamous stratified type. The percentage of cows remaining sterile after abortion cannot be definitely given, but appears to be of some importance.

With regard to the results of vaccination as given in Stockman's statistics, one may conclude that a considerable improvement has resulted. Only 5% of the vaccinated animals afterwards aborted, while 25% of the controls were affected. That seems quite a notable achievement. The results do not appear so good when one compares them with the percentage of abortions in some previous years. In these herds the infection had remained in existence for a number of years. In one year the abortions were as low as 7.6%. One cannot say then, that the method of vaccination has been absolutely effective. Perhaps with more experience and improvement in technique the percentage of subsequent abortions will be further reduced, and the method become an unqualified success. It is certainly worthy of a trial where it can be conveniently carried out, but I am of opinion that where we use it, it would not be wise to depend entirely upon it, and that attention should still be paid to isolation and disinfection.

I was sorry that Mr. Norris, in referring to the results of vaccine treatment, noted only the statistics which had been obtained in Great Britain. I understand that for some years the vaccine treatment has been given a trial by the Veterinary Branch of the Department in a number of herds in Ireland, and I had hoped that the statistics obtained from these outbreaks would have been available for Mr. Norris' paper. I trust that he will be able in his reply to give us an account of these experiments so far as they have gone.

(To be concluded.)

Care of Army Horses.

Mr. Tennant has given the following written answer to a question by the Earl of Ronaldshay regarding mortality among Army horses in training camps in this country: "There is no undue mortality among Army horses in training camps in this country, and very few, if any, deaths can be directly attributed to exposure. The number of horses which have died of disease in training camps in this country, and in veterinary hospitals on admittance from training camps, since the beginning of the war amounts to approximately 8000 animals. So thorough have been the arrangements, and so carefully considered the instructions issued, that at the present time the mortality of horses in training camps in this country only exceeds that of Army horses in time of peace by 2 per cent. per annum."

The Tuberculosis Order, 1914.

Mr. Hogge asked the Secretary for Scotland whether the Board of Agriculture was not bringing the Tuberculosis Order of 1914 into operation during the continuance of the war; whether he had received resolutions from any Scottish boroughs thereanent; what steps he proposed to take to protect the public; and whether, if the Order was not enforced, he proposed to enforce any modified form of Order.

Mr. Acland (Secretary to the Board of Agriculture) answered: Yes. The Board has decided to maintain the suspension of the Order until after the war. The only report which the Board had received against this decision was from the Edinburgh city council, which suggested that for the protection of public health a modified form of Order might be brought in. The Order, however, does not lend itself to modification on the lines suggested by the city council.

"Spanish Armada" Sheep.

Miss Eurgain Lort, the well-known pony breeder, of Carnarvon, was summoned before the local magistrates, on a charge of not dipping twenty-five sheep. The proceedings had been instituted some time before, but apparently there was a doubt on the defendant's part as to whether the sheep should be described as sheep or "animals." The story was that sheep of the same breed had been washed ashore from one of the ships of the Spanish Armada. The breed was now almost, if not altogether, extinct. Some of them had four and others six horns, and though they fought shy of men they were fierce with dogs. Those in Miss Lort's possession were formerly the property of the late Mr. G. W. Assheton-Smith, and the defendant, much to her regret, had thought it advisable to sell them to butchers. In those circumstances, Mr. Allanson, for the defence, suggested that the case might be disposed of by an order for costs only.—The Bench imposed a fine of 20s.

The Royal Sanitary Institute.

A Discussion will take place at 90 Buckingham Palace Road, S.W., on Tuesday, March 28th, at 4.15 p.m., on "MADE-DOWN AND TENEMENTED HOUSES," to be opened by G. M. PETTIT (Chief Sanitary Inspector, Kensington). The Chair will be taken at 4.15 p.m., by A. WYNTER BLYTH, M.B.C.S., L.S.A. (Registrar).

A Discussion will take place at THE PHYSICS THEATRE, UNIVERSITY, LIVERPOOL, on Friday, March 31st, at 3.30 p.m., on "TUBERCULAR DISEASES OF CHILDREN AND MILK SUPPLY," to be opened by Prof. J. MARTIN BEATTIE, M.A., M.D. The Chair will be taken at 3.30 p.m., by Col. J. LANE NOTTER, M.A., M.D., R.A.M.C. (Treasurer of the Institute).

On Saturday, April 1st, arrangements will be made to enable Members who are interested in Housing, Port Sanitary Administration, Tuberculosis Work, etc., to see the practical results in operation, if they would indicate to the Secretary not less than three days before the date of meeting, the visits they would like to make.

Advices from Denmark report that the prices of German cattle are enormous, reaching 2.80 marks per lb., and these have induced German farmers to sell without regard to breeding or milk produce. The German authority have now fixed maximum prices on the same basis as the February prices, which are more than double the prices realised in 1915.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds:—

Mr. F. W. Barling, Hereford	£1 1 0
Mr. John Brown, Invergordon	1 1 0
Mr. W. A. Campbell, Boroughbridge, Yorks	1 1 0
Mr. J. H. Carter, Burnley	1 1 0
Mr. J. Clarkson, Garforth, nr. Leeds	1 1 0
Mr. R. Cockburn, Eastwood, Notts.	1 1 0
Capt. J. C. Gaunt, A.V.C.	1 1 0
Mr. T. Hicks, Sleaford	1 1 0
Mr. W. E. Ison, Atherstone	1 1 0
Mr. D. S. Jack, King's Lynn	1 1 0
Mr. Alex. Lawson, Manchester	1 1 0
Mr. L. L. Leach, Boston, Lincs.	2 2 0
Capt. L. W. Wynn Lloyd, A.V.C.	1 1 0
Mr. T. McGhee, Tattenhall, Chester	1 1 0
Mr. S. J. Marriott, Northampton	1 1 0
Mr. J. W. H. Masheter, Massingham, K. Lynn	1 1 0
Major J. W. Rainey, A.D.G., A.V.S.	1 1 0
Mr. T. O. Richardson, Tarporley, Cheshire	1 1 0
Mr. G. J. Roberts, Pwllheli, Carnarvonshire	1 1 0
Mr. R. C. Tayler, Colchester	1 1 0
Mr. T. Wright, Putney, London, S.W.	1 1 0
Amount previously acknowledged	48 6 0
	£71 8 0

[A letter and proposal on this subject appear in another column.]

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, Mar. 17.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temp. Lieuts.:—A. E. Willett, K. Barker (Mar. 6); F. D. Neal (Mar. 7).

Mar. 20.

Cpts. to be temp. Majors whilst holding appmnt. of Asst. Director of Vet. Services of a Div.:—T. Bone (July 13); R. Tindle (Aug. 28).

Temp. Lieuts. to be temp. Cpts.:—B. M. R. West (Jan. 15); F. M. Coombs (Feb. 22); A. E. Roberts (Feb. 23); A. V. Meeke (Mar. 1); P. Braid, W. Barr (Mar. 8); K. A. Roberts, W. S. Stevens (Mar. 9).

The Christian names of temp. Lt. Frederick Lawrence Clunes are as now described, and not as in *Gazette* of March 25, 1915.

Mar. 22.

Major W. B. Edwards to be temp. Lieut.-Col. whilst holding the appmnt. of Asst. Dir. of Vet. Services, Cavalry Corps (Feb. 26).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Mar. 20.

Capt. D. R. C. Tennant to be Asst. Director of Vet. Services and granted temp. rank of Major whilst so employed (Feb. 11).

EXPEDITIONARY FORCE.

The following casualties are reported:—

DIED—Lieut. J. M. White.

KILLED—Cpl. C. A. Sherwood, E. Africa Vet. Corps.

Personal.

LAWRENCE—WHITEHEAD. On the 11th March, at All Souls, Langham Place, W., (by licence), by the Rev. Prebendary Webster, M.A., Rector, Capt. Cecil John Rhodes, A.V.C., youngest son of the late James Lawrence, M.L.A., J.P., and Mrs. Lawrence, of Kimberley and Mui-zenberg, Cape Colony, South Africa, to Ethel Beatrice, second daughter of Mr. and Mrs. William Whitehead, of New Romney, Kent.

SWANSTON.—On the 29th Feb., at 70 Westwood Road, Southampton, the wife of Maj. Nelson Swanston, A.V.C., of a daughter.

Dr. JOHN BLAKEWAY, F.R.C.V.S., Chief V.O., has taken over command of the Remount Depot, in succession to Lt.-Col. R. De Bray Hassell, who has left for England. *The Halifax Herald.*

OBITUARY

ROBERT LEES ROBERTSON, M.R.C.V.S., Thornton-le-Dale, Yorks. Graduated, N. Edin.: April, 1877.

Mr. Robertson's death occurred on March 18, aged 63.

CORRESPONDENCE.**VOLUNTARY SUBSCRIPTIONS—AN OFFER.**

SIR,—We are indebted to you for your articles on the financial position of our College and the proposed retrograde resolutions of the Council to meet it. I hope that these resolutions will be kicked out of the Council Chamber. The cry should surely be "Onward, onward," and not back to the days of more than a quarter of a century. Rather let us go down fighting for the where-with-all to carry on with efficiency than accept such a humiliating position. The whole thing is summed up in "Our Bill," and that we must have. The Council have, I believe, approached the Prime Minister unsuccessfully. Let every member of the profession approach his M.P., tell him our position, and that either we must have our Bill or become bankrupt. Let the profession wake up to one fact. There are hundreds of men at present in the Army Veterinary lines and hospitals being trained by the Veterinary Staff in treatment of disease and post-mortem appearances. After the war, I believe these men will be found in every town and village in the land as quacks. Our registration committee will need to be well breeched financially or they will be unable to grapple with a situation that I am convinced will be for many serious. At such a time the finger of scorn of inefficiency of our recent graduates must not be pointed at us.

With you, Mr. Editor, I believe the profession "is ready for a voluntary subscription" and for a lead, strong and persistent, to remove all obstructions between us and our Bill.

Will you help us by opening your columns for subscriptions? Surely there are twenty members who will provide the first hundred in a week. I will give £5 if nineteen others will do the same.

A strong subscription list would do much to win our Bill.

I enclose my card and beg to remain,

ANONYMOUS.

[We shall be pleased to accept the suggestion of our correspondent; and to publish the list of those who support his offer.—H. & W. B.]

PETROL ON "GREASY" LEGS.

It occurred recently to me to try petrol for greasy legs, I have done so with marvellous results by washing the parts daily with the petrol. I should be glad to read the experience of others.

WM. T. D. BROAD, M.R.C.V.S.,
Marlborough, March 20th.

OUR PRESIDENT AND THE PETROL SUPPLY.

Sir,—Allow me to signify my appreciation of Mr. Garnett's thoughtfulness in so quickly taking action to secure a supply of petrol to our profession. It so happened that I was in the act of writing to the Secretary of the R.C.V.S. on the subject before I saw Mr. Garnett's letter. I now say, Well done, Mr. President, may we long enjoy your invaluable services.

I have not been able to secure a gallon of motor spirit during the past two weeks, whilst I have heard of a gentleman farmer who, with keen foresight, ran around to various sellers and secured nearly 200 gallons, although a horse and trap should sufficiently supply his requirements. How different from the position in our case Mr. Garnett has made so sufficiently clear that further action by the profession in general is, I think, needless.—Yours truly,

JOHN HOLLAND.

Athy, March 21st.

A VOID IN THE VETERINARY PROFESSION URGENTLY REQUIRING FILLING.

In these days of Vaccine and Sero-therapy, Autogenous vaccines, Phylacogens, and all the other forms of biological products, I think it is a standing disgrace that we have allowed the manufacture of these good, bad, and indifferent products to remain in the hands of the manufacturing chemists.

What is wanted are laboratories run solely by the profession for the profession, to produce all these kind of products.

I would suggest one or more large farms taken on a lease, well in the heart of the country, and away from a populous centre, but near to some convenient railway junction. The farms to be worked by the animals supplying the products when possible.

The uses I propose for this institution and hospital would be manifold.

1. Production of reliable Mallein, Tuberculin, Antitetanin, Antitoxin, Autogenous and stock Vaccines, Swine Fever Serum, Distemper Vaccine and all allied products.

2. Microscopical examination of milk, blood, neoplasms, etc. X-ray photography.

3. Short demonstration and practical instruction to members of the profession on any subject, or recent discovery.

4. Post-mortem examinations on small animals forwarded and investigations made as to causes of mortality, at the instigation of veterinary surgeons, if not to the public as well. Also investigations for other outbreaks of disease or mortality, not scheduled.

5. Major operations or others, on the domesticated animals forwarded by veterinary surgeons who do not wish to undertake them, such as rigs, mare and bitch spaying, quitters, fistulae, and poll evil.

6. Any other legitimate method of raking in the brass, such as taking in pensioned horses to agist, dogs in quarantine, etc.

The institution or hospital should be run on a financial basis, free from government or outside control, and chiefly for profit. A few exceptions may be made—such as overstocking an enclosed piece of down or pasture with husky calves or worm infected sheep to study the life cycle of the parasites.

I cannot help thinking this would be a method of financing the R.C.V.S., and if I may make a suggestion.

Instead of touching any present capital, a company should be formed under the auspices of the members of the council, with an issue of £5, £10 or £20 shares to be taken by members of the profession only, such holders to be given free access (in reason) to the institution, and perhaps other benefits. One third the profits to go to the R.C.V.S., one third as interest, the other third to pay off capital.

Failing this, either the National Veterinary Association, or someone, make a start.

WM. T. D. BROAD, M.R.C.V.S.,
Marlborough, March 20th.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.		Out-breaks	Slaugh-tered. *
	(a)		(a)		(b)		(b)			(a)	
Gr. BRITAIN.											
Week ended March 18	12	15			3	7	45	107	7	80	292
Corresponding week in											
1915 ...	17	17					†	†	7	74	353
1914 ...	19	20	2	9	2	6	60	88	8	78	633
1913 ...	11	14			1	3	67	120	3	34	371
Total for 12 weeks, 1916 ...	154	175	1	24	18	53	957	2383	148	973	2060
Corresponding period in											
1915 ...	201	221			7	11	†	†	130	879	3682
1914 ...	228	243	11	74	26	70	913	1711	130	687	6149
1913 ...	158	175			36	111	942	2004	100	408	4762

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked:—Derby 5, Stafford 1.
Board of Agriculture and Fisheries, March 21, 1916
City of Edinburgh 1.

IRELAND. Week ended March 18	...	...	...	...	...	...	Outbreaks 4	4	4	63	
	Corresponding Week in {	1915 ...	1	1	...	...	...	1	6	6	79
		1914	11	133	2	36	4	6
		1913	3	11	...	16
Total for 12 weeks, 1916	...	1	5	...	...	...	...	22	165	53	264
Corresponding period in {	1915 ...	1	1	...	...	...	...	11	158	59	374
	1914 ...	...	...	47	649	...	...	28	275	50	290
	1913 ...	...	...	...	...	...	...	71	199	37	204

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, March 20, 1916.
Note.—The figures for the Current Year are approximate only.

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THE VETERINARY RECORD

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CONTAGIOUS BOVINE ABORTION.

The paper by Mr. Norris and discussion on this subject, in this and last week's issue, is interesting throughout. Towards the conclusion of the paper a passage occurs where, after commenting upon the absence of any plan of organised attack upon the disease, the essayist remarks—"We have now a sufficient scientific knowledge of contagious abortion to apply it with good effect, but the work must be done in a systematic, not spasmodic manner." This is quite true, though the knowledge has only been acquired within the memory of most of us. Not so very long ago, we knew so little of the disease that we could not do much against it. To-day, we know so much about it that we ought to be doing more than we are.

Compare our present knowledge of the disease with that of twenty years ago. We are now able, by a bacteriological examination, to definitely recognise specific abortion whenever it appears; and we are also able, by a biological test, to recognise infection in its early stages. Even this knowledge renders it possible to do a great deal in controlling the disease by isolation and disinfection—much more than is yet being done in many districts. These measures alone, if generally adopted wherever infection exists, and carried out "in a systematic, not spasmodic manner," would do more to lessen contagious abortion than many farmers, and perhaps even some veterinary surgeons realise. They are all classic measures; their utility is proved; but the advances in our diagnostic knowledge enable us to apply them much earlier than we once could. With them we now have the Board of Agriculture's immunisation methods, which are not unlikely to prove even more powerful weapons.

Time, and results from a larger number of herds, are required before the value of immunisation against contagious abortion can be rightly assessed. But all the reports of it that have yet been published are highly encouraging; and the field immunisation now going on in several English counties might—and should be utilised wherever the disease exists. A sufficiently general and sustained campaign against bovine abortion by the means now at our disposal would offer excellent prospects of ultimate success. Our present knowledge of the disease warrants us in saying so much, and in urging farmers to make the effort. Hitherto, all efforts have been more or less isolated, and some very half-hearted; and there is much need for educating a large section of farmers; but, by working in this direction, great advances may soon be made possible.

ANAPHYLAXIA IN CATTLE AND PIGS.

A. J. S. Van Alphen has recorded some cases of this nature (*Schweizer Archiv. für Tierheilkunde*).

The author has never seen cases of anaphylaxia in pigs treated with serum against swine erysipelas. He has seen it follow the use of serum against swine plague. (The pneumonic swine plague well known in America and on the Continent—not swine fever.—*Transl.*)

Forty-five pigs of the weight of about 50 kilogrammes (= approximately 110 lb.), were injected subcutaneously with 16 c.c. of this serum, and received a second injection of 20 c.c. 37 days later. A day after the second injection some of them became dull, refused food, and showed difficulty of respiration. These symptoms quickly disappeared without leaving any trace behind, and the author regards them as manifestations of anaphylaxia.

Sometimes cases of anaphylaxia occur in sero-vaccination against anthrax; and the author reports some of these. In one case he injected some cattle with anti-anthrax serum, and repeated the injection three and a half months later. Half an hour after the second injection, five cows presented serious symptoms. They showed oedema of the eyelids, nose, anus and vulva, grave difficulty in respiration, and discharge from the nostrils. The animals were freely splashed with cold water and rapidly recovered, the only symptom which remained for some time being a marked diminution in the yield of milk.

In another instance, 27 cattle were injected with 10 c.c. of anti-anthrax serum, and the treatment was repeated 13 months later. Immediately after the second injection, one cow showed coughing, difficulty of breathing, and oedema of the head, anus, udder, and abdomen. This cow died after half an hour, and post-mortem examination revealed a profuse pulmonary oedema. Six weeks later the other cattle had a third injection of 10 c.c. of serum each. At the end of an hour all showed illness, and fourteen of them had oedema and difficulty of respiration. Three animals, almost moribund, had to be brought into the open air, and there recovered. At the end of 24 hours the danger was over, and only the oedema remained.

One herd of cattle were injected with 10 c.c. each of anti-anthrax serum twice in the year; and one died suddenly ten minutes after the second injection.

In another herd, the serum was injected four times without any inconvenience, the intervals between the injections being 12, 17, and 14 days

respectively. A fifth injection was then given 40 days after the fourth. Two hours later two cattle died of asphyxia, and the post-mortem examination revealed pulmonary oedema. The other animals also showed symptoms, but recovered in a short time.

In order to lessen the danger of anaphylaxia from repeated injections of anti-anthrax serum, the author advises heating the serum for three hours at a temperature of 50° C.—(*La Clinica Veterinaria*).

UTERINE CYST IN A COW.

Grimal has recorded the following case (*Revue Vétérinaire*). A cow, about eight years old, prematurely gave birth to a dead foetus; and, as the membranes did not come away in the normal time, manual extraction was practised. As soon as the hand was introduced into the vagina, a fluctuating swelling the size of the fist was detected on the left wall of the vaginal cavity. This cystic swelling was only a slight impediment to the operator's movements, and the extraction was proceeded with. At first the separation of the cotyledons was effected easily; but suddenly, under the influence of an expulsive effort by the cow, the operating hand was compressed between the uterine wall and a voluminous mass which occupied the centre of the cavity. This swelling opposed the passage of the hand towards the anterior part of the uterus. In the interval between two contractions, the swelling subsided and slipped down towards the base of the uterus; and at that moment a great quantity of a reddish and fetid foetal liquid was discharged from the vulva. The exploration was then continued; and the same swelling was again encountered on the right side of the uterine horn and towards the median part. The mass was elongated from before to behind, flattened laterally, and of the volume of a large melon. It was about 16 in. long by 8 in. broad. Its surface was smooth, and its consistence distinctly fluctuating. When the hand was passed over the sides of this mass, it was found to contract progressively down to its point of insertion into the uterine wall, which was constituted by a true pedicle capable of being flattened between the fingers. The swelling was therefore an enormous cyst. The removal of the membranes was completed with considerable difficulty, partly arising from the abnormal size of the uterus, which was greatly enlarged anteriorly and below.

Ablation of the cyst was performed with the chain ecraseur, used after the ordinary fashion. Before completing the division of the pedicle, the cyst was punctured at its centre by means of a trocar. A citrine liquid flowed out, and was evacuated by the vulva. An injection of boiled water was then given, and the cystic wall, without its contents and collapsed, was removed. The small cyst at the entrance to the vagina was simply punctured. The cow made a rapid and uneventful recovery.—(*Rivista de Higiene y Sanidad Veterinaria*.)

RENAL GLANDERS IN A HORSE.

Bambauer has observed and described one of these rare cases. The left kidney was considerably

enlarged, and one half of it took the form of a roundish tumour of red-grey colour, radiate structure, and firm consistence. In this tumour, in the cortical region of the kidney, were found yellow-brown irregularly shaped centres, from millet seed to five-pfennig piece size, from which a purulent mass could be pressed out.

Histological examination of sections revealed a considerable round-celled infiltration, by which the greater part of the renal epithelium was displaced. Numerous hæmorrhages were present in the tissues. The urinary canals were considerably infiltrated with lymphocytes, and contained blood. Guinea-pigs infected with pieces of kidney became affected with glanders. It is not stated whether other organs of the horse beyond the left kidney showed glanderous lesions.—(*Berliner Tier. Woch.*)

W. R. C.

THE VETERINARY MEDICAL ASSOCIATION OF IRELAND.

[NATIONAL V.M.A.—IRISH BRANCH.]

(Continued from page 438).

MR. MAGEE: In those cases that we know for certain are cases of contagious abortion, I do not think it likely that treatment will ever be applied to such an extent in Ireland as in other countries. My reason for saying this, in the first place, is that it would not pay a veterinary surgeon to try to carry out his practice on these lines—to elaborate its technique, and it would not pay the owners of stock either. It would be too expensive. Wherever I have come into contact with the disease I have never treated a case, for the simple reason that wherever I suspected it I have always advised the owner not to breed again from the animal, but where possible to fatten it and get rid of it. I think that is really often the best advice to give in this country, because probably there is no country in the world like Ireland for fattening animals. That is particularly the case where I come from—the County Meath. Of course, in the case of a pedigree it might be better to apply treatment if we were confident of its success.

I am inclined to think that antiseptics play a very small part—if they play any part at all in treatment—that where antiseptics are applied their success is of a mechanical nature. Water would be as likely to have good results as the application of weak antiseptics. I do not think that we often examine our consciences, and decide what per cent. of antiseptics will kill the bacillus.

MR. NORRIS: You mean killing it outside?

MR. MAGEE: It is a different thing killing it inside, but outside it gives you a line to act on, although the circumstances are different, in not having similar power. This point came up before, on a paper by Prof. Craig some time ago, with regard to the treatment of worms. Mr. Norris at the time said he had very little belief in the administration of drugs for the destruction of worms in the alimentary tract. Since he made that statement Prof. Craig has carried out some very valuable research work which does not go to bear out Mr. Norris's statement on the point. Even if we do find that a certain antiseptic will kill the germ outside the uterus, it will not follow that it will kill it by injecting it into the uterus. The germ of contagious abortion will probably be found in the wall of the calf-bed, because we are told that the bacilli can be carried through the alimentary tract by the blood stream to the uterus. The only other

point I wish to refer to is the well known one that cases very often cure themselves. That I think is very often the explanation of the apparent good result of many forms of so-called specifics which were used in various parts of the country. I look upon the administration of carbolic acid in these cases as a so-called specific. I have only to thank Mr. Norris for his very interesting paper. (Applause).

Mr. HEALY: As a rule you will find in practice you get more cases of abortion in first-calf heifers. You get a lot of ten or twelve heifers to a bull; one slings her calf, and the whole lot carry it through. The people who own them won't use much disinfectant. One day you find them all right, and the next you go there and find the place all round polluted by this wretched discharge that comes from the cows that have aborted. I do not say there would be no mechanical carriage of infection by the bull or by ingestion. The place has not been disinfected, and I do not see why that would not be the cause. First-calf heifers are generally put to an old bull while young bulls run with the old cows. Dealing with a lot of in-calf heifers, as we do in Cork, I have known a lot of this. I do not see why a bull on such grazing for a long time should not infect the heifers as much as a bull on it at any time with the bacillus of contagious abortion. As a country practitioner I would like to know the results of the Department's experiments in inoculation. This disease causes great loss to farmers. A man may have a good heifer that he wishes to send to dairy, and if he finds it useless to send her to the bull he must fatten her off. It is stated that the disease will wear itself away, but few people could afford to run their stock that way. I think disinfection should always be used, with isolation and the removal of all manures. I had charge of a herd of Aberdeen Angus, and a bull was brought from Scotland. The herd never had the disease previously. This was a two-year-old bull, and the result was that a number slung their calves in from four to six months. I wish to thank Mr. Norris for his interesting paper.

Mr. DUNLOP: I have read Mr. Norris's paper with very great pleasure. Although he calls it a review, I do not think he has omitted anything of any practical importance. I quite agree that it is sometimes difficult to get people to disinfect the uterus and parts liable to become infected. When the os is partially closed and the uterus more or less contracted, it requires great patience, care, and perseverance to remove the placenta without leaving fragments behind. Unless the placenta is completely removed it is better to leave it untouched.

I have used copper compounds as uterine disinfectants, but one has to be careful to avoid anything that may cause undue irritation. For retention, generally I have inserted, well into the uterus, suitable boluses of boracic acid with a small percentage of salicylic acid. For retention of the placenta, whether it be due to contagious abortion or not, I have always attached considerable importance to good drainage, and with that object in view I have been particular to have the front of the stall well elevated. In many dairies the usual practice is to buy as required newly-calved or in-calf cows, the stock all the time being gradually fattened off and prepared for the butcher. When this is the practice there appears to be no end to the disease. In such cases I always advised isolation of the new arrivals. The discharge is characteristic, and when other cows in the dairy abort without any apparent cause there need be no doubt as to the nature of the disease we have to deal with. Seropathy was not in vogue when I was in practice. Seeing that contagious abortion is transmitted by ingestion there should be no reasonable doubt that the bull may be the carrier of the disease, either by direct contact or by the excreta. The case referred to in which a bull imported from Scotland was the means of spreading the disease amongst a large

herd of cattle goes to prove that bulls may readily be vehicles conveying the disease over long distances.

I am sure we all believe in economy, and it is most desirable that food given to cattle should be turned to the best account in the form of milk or beef; but there is another side to that question—although production and nourishment are to some extent antagonistic they are not altogether incompatible. When the food digested and assimilated goes to extreme productiveness little remains to generate heat, nerve force, etc., consequently the animal is unable to resist shock and chills or to overcome disease; I am not surprised, therefore, to hear that well bred animals are more subject to, and suffer more from contagious abortion than native Irish cattle. If animals were awarded prizes for their proved ability to resist diseases as well as for their form, early maturity, and productiveness, those with a pedigree would be the most healthy. The same applies to all other infectious diseases, in man as well as in animals. Unfortunately, our authorities still continue to award prizes for tubercle reactors without having the animals tested, and as a result, infants are either deprived of a most valuable article of diet, essential to their well-being, or those of them who happen to inherit the predisposition are either decimated or liable to be maimed for life. Our authorities are most particular in having horses examined for spavin, roaring, etc., but they appear to be remiss where human life and health are involved. Although the walls of the uterus and the foetal membranes afford no protection to the unborn against contagious abortion, pleuro-pneumonia, etc., yet they act as a perfect screen to prevent the tubercle bacillus reaching the foetus. This is rather unfortunate. It would be well for the country if all the produce of reacting animals were to die or be slaughtered at birth. Tubercle resisting breeds of animals would soon be established, and human mortality and suffering greatly reduced.

I have again to thank Mr. Norris for his very clever, succinct, and comprehensive paper. (Applause).

Prof. O'CONNOR: I am afraid that any remarks I have to make will not throw further light on the subject of this paper. I would not like that the occasion should pass without expressing appreciation of its excellence: I think it is a splendid review of the subject. I think that a most valuable feature of the meeting this evening has been the description of the use of the instruments for manipulating the uterus and treating it effectively. As has been stated, it is practically impossible to thoroughly disinfect the uterus, especially if the os is closed. Mr. Norris has shown that by the use of these instruments it can be thoroughly and effectively dealt with. I would like to see a practical demonstration with the instruments upon an animal; I think it would be well worth while for the Association to arrange for such a demonstration. I thank Mr. Norris for bringing forward this very important subject. (Applause).

Mr. HOLLAND said Mr. Norris deserved thanks for going to the trouble of preparing such an excellent paper. He said he thought very good suggestions had been made for preventing the fouling of pastures by confining animals likely to abort, and those discharging, as well as disinfecting the animals. He referred to the manner in which certain of the instruments exhibited by Mr. Norris were utilised.

REPLY.

Mr. NORRIS: I thank you very much for the manner in which you have received my paper, and for the very good and sustained discussion upon it. I did not consider it necessary to go over the whole subject in detail, I merely touched upon points of interest and gave you what might be called a skeleton paper, leaving it to you in discussion to clothe it.

The first point raised is as to the part played by the bull in spreading the disease. I freely admit this ani-

mal may play an important part as a mechanical carrier, but probably its influence on the spread of infection has been exaggerated in the past. A bull reacting to the agglutination test need not necessarily be a carrier of infection. On the other hand, a non-reactor, for all that is known to the contrary, might be a carrier. It depends solely upon the sanitary condition of the animal's genital organs. The point to remember in connection with the spread of abortion is, the many facilities which generally exist for its spread by ingestion.

Turning to diagnosis, a microscopical diagnosis requires a fair amount of experience to establish confidence, but should be very useful to practitioners as a rapid means of arriving at a definite diagnosis especially in those cases where the clinical and microscopic pictures are fairly characteristic. The agglutination test, as already pointed out, has a wider application, but it requires care and experience to read and apply the lesson of its results aright. Mr. Howard mentioned Methylene blue had been applied as treatment with some success in America. I think it has not been used extensively, and I doubt if it is considered of much importance, even in America. Prof. Craig asks me why I vaccinated a cow which aborted from vibrio infection with a vaccine prepared from Bang's bacillus. The animal was included in a lot of aborters vaccinated at the owner's request. I mentioned it owing to the fact of anaphylactic reaction which followed vaccination, and which prompts me to ask if there is any subtle relationship between the two forms of abortion? Prof. Craig states that it has been found that abortion bacilli do not remain long in the uterus after abortion. I am afraid that statement rests upon a rather small amount of research work and does not apply generally. I believe in cases where the bacilli are cleared out of the uterus a second abortion does not take place, and in cases where a second abortion does take place it is simply a continuation of the first infection. A second abortion may start from a very small focus of infection remaining upon the internal walls of the uterus, not sufficiently extensive to interfere with conception but which grows as pregnancy advances, and ultimately brings about abortion. The probability of a second abortion arising from a fresh infection seems unlikely if we are to place any faith in the merits of artificial vaccination, because such cases should possess a strong naturally acquired immunity as a result of first infection.

The question of disinfecting contaminated fields is a difficult one, but I think the application of lime is probably the best thing that can be done in the circumstances. Prevention is far better in this respect, and care should be taken to house animals discharging, or showing imminent sign of abortion. It should not be overlooked that very early abortions, which often escape attention, may be a cause of pasture contamination.

After treatment of the animal: The object we should keep in mind is not a chemical disinfection of the cavity, but a removal of the morbid contents of the uterus by such agents as saline solution or a very mild disinfectant. The Hypochloride of soda should make an excellent agent for the purpose. I believe if the uterus of an aborter can be brought to a normal condition before subsequent conception there is no reason to fear a second abortion. Time plays an important part here, and the extra rest (about two months) given to vaccinated animals before service must have a great influence upon results. Vaccine may be useful when applied to susceptible animals if these are in danger of infection, but I rather fail to see the necessity for it when applied to aborters. I believe experience will show that local treatment of the uterus on Albrecht's lines, and rigid disinfection of premises combined with a reasonable system of isolation, will yield more satisfactory results than the somewhat objectionable system of indiscriminate vaccination.

The PRESIDENT said it had been the custom to hold an annual dinner until the last few years. The matter had been discussed as to whether it should be held or not. They were now in the unique position that it had been decided to make Mr. McKenny an Honorary Associate. In order to do themselves justice they should have some function on the occasion of presenting him with the diploma. He was perfectly certain that they were all agreed that they should do all they could in honouring so worthy a member as Mr. McKenny. If the members are satisfied the arrangements might be left in the hands of the Council. [The President's suggestion was agreed to.]

REBATE ON PETROL TAX.

The PRESIDENT said that they were all aware of the efforts of their worthy friend, Mr. Holland, towards securing this rebate, and how successful his efforts had been. Whenever he took up a subject he was always successful. He (the President) was sure that his colleagues and the members of the profession would accord him their very best thanks for his efforts in that direction. It had been proposed at the last Council meeting that the best thanks of the Association should also be given to those Members of Parliament who interested themselves on behalf of the profession in securing this rebate. He (the President) was sure that it was the wish of the meeting that they should pass a vote of thanks to the Members of Parliament, and particularly Mr. Holland, for securing the concession.

Mr. HEALY: I would ask you specially to include the name of Captain Donelan in the vote of thanks. I think we owe our gratitude to him particularly in connection with this.

The PRESIDENT: We will thank all the Members of Parliament who had anything to do with it.

Mr. MAGEE: From what date does the benefit come into operation?

Mr. NORRIS: The 21st September last.

The vote of thanks was passed unanimously.

Prof. CRAIG proposed a cordial vote of thanks to Mr. NORRIS for his able and interesting paper, and the motion was passed unanimously.

J. J. O'CONNOR, Hon. Sec.

BORDER COUNTIES VETERINARY MEDICAL SOCIETY.

[NATIONAL V.M.A.—NORTHERN BRANCH.]

A meeting of the Society was held at the Bush Hotel, Carlisle, on Friday, Feb. 25th. Present: Mr. Barrow, President; Messrs. Donald, Wigton; Pollock, Lockerbie, Capt. Bowden, A.V.C., and the Secretary, Mr. R. Craig Robinson.

Apologies were read from Messrs. Bell, Lindsay, Baird, and Garnett.

Minutes of previous meetings were submitted but not approved, as no seconder was forthcoming. Officers were not appointed for the ensuing year on account of the meagre attendance.

It was agreed to admit Mr. DUNLOP, of Thornhill, to the Society. The remainder of the afternoon was spent in conversation, and those present were entertained to tea by the Secretary.

R. CRAIG ROBINSON, Hon. Sec.

At the Sheriff Court, Edinburgh, three different defendants have recently been fined for selling milk containing common salt and cane sugar, the object of the addition being, apparently, to increase the amount of solids not fat.

ANNUAL ADMINISTRATION REPORT OF THE GLANDERS AND FARCY DEPARTMENT, BOMBAY, FOR THE YEAR 1914-15. [Extracts.]

During the year under report 40 horses were seized under the Act and taken to the Lazaretto as against 48 last year. Of these, 35 were found to be diseased within the meaning of the Act and dealt with accordingly. Of the diseased animals, five were cases of glanders, one epizootic lymphangitis and 29 surra.

Besides the above cases 55 equines (38 horses and 17 mules) belonging to different regiments passing through Bombay at the time of embarking were removed to the Lazaretto as cases of Glanders and Surra and were dealt with under the Act. Of the 55 cases, 38 horses proved to be affected with glanders and 17 mules to be affected with surra.

Of the 40 horses admitted to the Lazaretto, 26 were Arabians, 11 Australians and three Country-breds. Of the animals diseased 23 were Arabians, nine Australians and three Country-breds.

K. HEWLETT, I.C.V.D.,
Principal, Bombay Veterinary College.

ANNUAL ADMINISTRATION REPORT OF THE CIVIL VETERINARY DEPARTMENT, BOMBAY PRESIDENCY, FOR THE YEAR 1914-15. [Abridged].

Major G. K. Walker took over from Lieut.-Colonel H. M. Maxwell on the 12th April and held charge for the remainder of the year. He was on tour for 170 days and travelled 12,282 miles by rail, 1036 miles by road and 40 miles by sea. He visited 16 districts of the Presidency proper and the Kathiawar and Palanpur Agencies for investigation and inspection. Interviewed district officers and others in regard to the work of the department as far as possible. Attended several outbreaks of epidemic disease and instituted or criticised repressive measures.

He inspected 35 veterinary dispensaries and 11 stallion stands once or more. Visited the Vaccine Depot at Belgaum, the military dairies at Belgaum and Kirkee, and the civil dairy at Poona. Inspected a number of pinjrapoles in the course of his tours, and the cattle famine camp at Sholapur. Attended the cattle shows at Talod and Bijapur and the horse show at Ahmedabad. Acted as President of the Board of Examiners at the Bombay Veterinary College in April and November, 1914. He spent 23 days at the Northcote Cattle Farm, Charodi.

Mr. J. D. Buxy held the post of Deputy Superintendent throughout the year. He was 63 days on tour and travelled 3108 miles by rail, 598 miles by road, and 328 miles by sea. Visited 11 districts and inspected 19 dispensaries and five stallion stands. Attended several outbreaks of epidemic disease and organised inoculation work. He acted as personal assistant to the Superintendent at headquarters.

The number of Veterinary Inspectors was increased to four on the 1st July. A new division with headquarters at Nasik was created and the district redistributed. The Inspectors were each provided with a clerk. The work has much increased of late, and the increased establishment has been beneficial.

TREATMENT OF DISEASE.

During the year contagious disease was reported from all the districts in the Presidency and the City of Bombay. 9378 deaths were recorded against 4074 in the previous year. The increase in the mortality was due mainly to the greater prevalence of rinderpest. The figures are prepared from the returns of Mamlatdars and Mahalkaris, and from the Health Officer to the City of Bombay. Outbreaks, regarding which intimation

has not been received officially, are sometimes reported by private persons. This is a pleasing sign of confidence, but it demonstrates the fact that outbreaks of disease do not always come to notice through the prescribed channels. In course of time a more perfect system of reporting and tabulating may be devised. It may await the necessary expansion of the veterinary staff in order that reports may be promptly attended to. During the year under report 1131 outbreaks were attended by Veterinary Assistants and 69 by Veterinary Inspectors, a notable increase over the previous year.

Epizootics among cattle, and more especially rinderpest and foot-and-mouth disease, may be frequently traced to infection from adjoining Native States where there is little or no veterinary staff available. At present restriction on movements of cattle appears to be impracticable. The department is frequently applied to for assistance by Native States, but it can be given rarely, as men cannot be spared. Government have sanctioned the deputation of men when they can be spared under certain conditions which have been communicated.

Contagious Disease.

Equine. There was an increase in the number of deaths from glanders and surra in horses in Bombay City in the year under report. No cases from glanders were detected in the districts of the Presidency and the deaths from surra showed a slight decrease. No cases of dourine or anthrax were reported among equines. One case of epizootic lymphangitis was reported from Bombay City. An outbreak of strangles appeared among the animals employed on the Talod-Modasa dak line in the Ahmedabad district, but the number of deaths was not reported. The rule for dealing with disease scheduled under the Glanders and Farcey Act are being revised.

Rinderpest. There was an increase in the number of deaths from this disease. 16,560 animals were attacked, of which 6833 died, against 4644 attacks and 2103 deaths in the previous year. The rate of mortality, viz., 41 per cent., was remarkably small. Sartara was the only district that escaped. It was particularly widespread in the Ahmednagar, Dharwar, Kolaba and Thana districts.

Foot-and-mouth-disease was reported from every district except Ahmedabad, 7348 animals being attacked against 12,293 in the previous year. Only 99 deaths were reported.

Hæmorrhagic Septicæmia appeared in all districts except East Kandesh and the City of Bombay. The number of deaths was 1494 out of 1969 attacked. The diagnosis was confirmed by microscopical examination in 83 outbreaks out of 199 attended. In many cases the disease had disappeared before the arrival of the Veterinary Assistant.

Black quarter was reported from eight districts and 32 outbreaks were attended. There were 193 deaths.

Anthrax caused 584 deaths in 11 districts. Thirty-two outbreaks were attended, and the diagnosis was confirmed in 14.

Other animals. Fifteen deaths were reported in sheep from contagious pneumonia in the Kaira district. Seventy-four cases of rabies were reported by Veterinary Assistants. In 27 instances brains were sent to the Bombay Bacteriological Laboratory at the request of the owners.

Preventive measures. In order to deal with serious outbreaks of disease more promptly and effectively, arrangements for the formation of "emergency corps" have been made. An "emergency corps" is formed by a Veterinary Inspector from the reserve men under training in his division, without reference to the head office. With a sufficient number of assistants to work under his immediate orders a Veterinary Inspector is able to undertake inoculation and other

necessary work with a large prospect of success—provided that he gets the necessary help and sympathy from the people themselves. Good effects have already resulted from the adoption of this system, but the department is handicapped at present by paucity of reserve staff. It is hoped that in course of time the system may be developed to meet all emergencies. One of the many points in favour of it is its educative value to the people and the veterinary staff.

Preventive inoculation against rinderpest was conducted in 302 outbreaks. 54,223 animals were inoculated, of which 262 died after inoculation. 4046 uninoculated contact animals died of the disease. This is the largest number of inoculations carried out in this Presidency so far, and it may be regarded as significant of the progress and popularity of the department's endeavours. Results appear to have been good on the whole. It is not easy to obtain absolutely accurate and unprejudiced information in all places, but improvement in this respect may be expected. Eighty-eight inoculations in an outbreak of hæmorrhagic septicæmia at the Northcote Cattle Farm at Chharodi were performed and no deaths followed. Instructions have been issued to the veterinary staff as to the use of more laboratory products in the field, and vaccination against black-quarter and hæmorrhagic septicæmia will be carried out when the local conditions appear to be suitable.

Other disease. 3799 villages were visited by the Veterinary Assistants during the year, and apart from their work in connection with the treatment and inoculation of animals suffering from contagious disease they treated 14,271 animals for non-contagious ailments, and castrated 67. Animals for castration are usually brought to the dispensaries, but more cattle might be operated on in the villages with advantage, and attention is being directed to the matter.

Investigation. During the year the subordinate staff submitted 470 specimens to the Sir Dinshaw Maneckjee Petit Patho-Bacteriological Laboratory at Parel for diagnosis, and 32 morbid specimens to the museum. It is proposed to equip a small laboratory at headquarters for diagnosis and other work. There is considerable scope for investigation, but a special staff is required to deal with it thoroughly.

Veterinary Dispensaries. Two dispensaries were opened during the year. There are 52 dispensaries at present. At least one is required in each taluka. Several District Local Boards are desirous of increasing the number of dispensaries in their districts and have applied for the necessary assistance. The shortage of qualified recruits for the department is delaying matters unfortunately. The total number of patients treated was 126,915 against 120,741 in the previous year. The figures denote steady and satisfactory progress. Of the above cases 44,656 were not brought for treatment, but their owners were given advice and medicine. This method of treatment is not very satisfactory, but it is unavoidable at present. New rules for the local management of dispensaries have been circulated and practically unanimously adopted.

During the year permanent buildings have been provided at Satara, Anand and Gadag, and the existing site and building at Chikodi (Belgaum) has been acquired with the help of grants from the Wadia Trust. The new dispensary at Bulsar is nearing completion. Part of the necessary funds have been provided through the liberality of Mr. Dhanbhura of Bulsar. It is proposed to provide new buildings at Savda (East Khandesh), Bardoli (Surat), and Baramati (Poona) during the forthcoming year. Others are urgently required. The hired buildings in which many of the dispensaries are accommodated are unsuitable.

BREEDING OPERATIONS.

Stud bulls and their produce. The only Government stud bulls are those kept at the Northcote Cattle Farm.

Others are maintained or provided by local bodies. Local bodies do not interest themselves very much in cattle-breeding. When the cattle survey is completed and it has been decided exactly on what lines to proceed the matter will be brought to their notice.

The number of cattle, exclusive of those belonging to Mr. Borges, at the close of the year was 519, being an increase of 15. 107 calves were born during the year; 10 bulls, 12 bullocks and 2 cows were sold. In addition 32 female stock were cast and sold by auction. There were 36 deaths, 15 from natural causes and 21 from epidemic disease. Rinderpest broke out in April and August, but was checked by means of inoculation and other preventive measures instituted personally by the Superintendent. A few cases of hæmorrhagic septicæmia and piroplasmosis also occurred. Hæmorrhagic septicæmia antiserum was used with good effect.

The year has been a successful one financially. The farm was established to preserve the Kankreji breed of cattle, and selected herds are kept primarily for the production of bulls for stud purposes. The herds were gone through carefully during the year and classified. There is not a great demand for bulls and more could be supplied. Some of the male stock are being castrated and trained as bullocks for which there is always a good market.

Horse and pony stallions. At the commencement of the year there were 37 stallions at work, viz., 14 horses and 23 ponies. Two horses and four ponies were purchased and two were destroyed. Two more stands were opened during the year, one at Deodar (Palanpur Agency) and one at Charodi (Ahmedabad District). 28 stallions were stationed in the Deccan and 13 in Gujarat.

Thirty-eight stallions were actually employed at the stud, and they covered 1589 mares against 1543 in the previous year or an average of 41.51 each. The number of foalings is not known. It is practically impossible to find out. A number of useful foals by Government stallions have been inspected, however, both in the Deccan and in Gujarat, and the services of the stallions appear to be generally appreciated by owners of mares.

The annual cost of feed and keep amounted to an average of Rs. 492 per stallion, as against Rs. 479 last year. The increase has been in the Deccan, where prices of grain have ruled high.

Fairs and Shows. The Ahmedabad horse show was held in the first week of February. It was attended by the Superintendent who assisted on the Judging Committee. A grant of Rs. 2,500 and a silver medal were provided by Government and financial support was given also from local sources. Considerable local gratification was expressed that the show has been revived. Horse shows are useful to demonstrate the results of endeavours to improve the local animals. The members of the local veterinary staff are always detailed to attend shows and give every assistance, as well as lectures and demonstrations. Prizes for cattle are only indicated in cattle-breeding tracts. It is doubtful if they do much to encourage intelligent cattle-breeding at present, as most of the exhibitors are inclined to regard their receipt as fortuitous, and not as emblems of the excellence of their produce.

SUBORDINATE ESTABLISHMENT.

The following staff was employed at the end of the year under report: Veterinary Inspectors, 4; Veterinary Assistants, 63. One Veterinary Assistant was employed as Manager of the Northcote Cattle Farm,

and 52 were in charge of dispensaries with touring duties in connection with epidemic disease and general veterinary work. At the close of the year there were 10 reserves who were attached to the larger dispensaries for training and relief duty. They were frequently employed for attending epidemics under the orders of the Veterinary Inspectors. During the year the sanctioned establishment of Veterinary Assistants has been under strength, and on March 31st there were 3 vacancies. Recruits are not obtainable, and at the time of the submission of this report, there are no less than 12 vacancies. The matter has been represented to Government, and it is hoped that it will be possible to provide suitable candidates in future. The progress of the department is much handicapped by lack of sufficient staff.

The work of the subordinate staff during the year has not been marked by any exceptional enterprise as a whole, though many men have worked hard in connection with outbreaks as testified by the number attended and the inoculations performed. Endeavours have been made to bring home the fact that there is very great scope for originality and enterprise, and that the future of the department depends upon the individual. Work in connection with outbreaks of contagious disease is of primary importance. Dispensaries are usually well conducted and good work is being done at many of them. Frequent absence is unavoidable, especially when there is much disease in villages: it is necessary, therefore, for every veterinary assistant to see that his dispensary staff is well trained and capable of dealing with urgent and ordinary cases. In addition to ordinary treatment of animals in villages, Veterinary Assistants have now been required to make enquiries in regard to cattle-breeding and other kindred matters interesting to the department, and even if no great results are to be immediately expected the educative value is important.

The sudden death of Rao Saheb J. K. Bhatt on March 2nd was a great loss to the department. He was a popular and energetic officer. Veterinary Assistant (now Veterinary Inspector) P. V. Nagarsheth did very good work as Manager of the Cattle Farm and deserves his promotion. Veterinary Inspector Maniar who was appointed to the newly created Nasik Division showed a good grasp of his work and applied himself energetically and intelligently. The following Veterinary Assistants did commendable work: A. D. Lopez (Poona), S. V. Soman (Sholapur), H. B. Shirsathe (Baramati), J. G. Kulkarni (Hubli), B. B. Patel (Godhra), M. K. Garudachar (Sirsi), G. K. Mainkar (Malegaon).

GENERAL REMARKS.

The year has been marked by satisfactory progress particularly in dealing with epidemic disease, but operations are frequently hampered from lack of sufficient staff. Attention is being paid to the intricacies connected with the care and improvement of the cattle of the Presidency. The Superintendent read a paper at the annual Provincial Co-operative Conference at Poona on Co-operative Cattle Insurance, and the scheme was approved. It remains to get it taken up in favourable localities. Several schemes for the improvement of the department and for enlarging its scope are under consideration, but as extra expenditure would be involved they are not being pressed at present. The internal administration of the department has been subjected to certain revisions and innovations during the year, and Mr. Buxy, the Deputy Superintendent and the clerical staff have worked hard and loyally.

G. K. WALKER, Major,
Superintendent, C.V.D., Bombay Presidency.

How long should a cow be kept?

Many dairymen and others who milk cows for profit believe that when a cow reaches the age of seven or eight her useful years are over, and that she should be replaced by one younger. But, other things being equal, this is a mistake. A cow that has been well cared for, with generous rations and proper attention given to her comfort through all seasons of the year, is better and will make a more profitable return at eight years old than at any earlier age; in other words, she is in her prime, and she will continue in this condition several years, and will not be considered an old cow until 14 or 15 years have passed. Cows with first calves—at two or three years—are generally unprofitable in their milk yield, and one really good cow between seven and eight years old will pay a better revenue than two that are performing their first year's duties in the dairy herd, and will probably consume but little more food than one of the younger ones. A dairyman who manages well knows which are his best cows; these he will not sell, under ordinary circumstances, as long as he continues in the business, it is, therefore, wise in buying a cow to investigate well the reasons for selling. It is essential that a dairy cow, to be profitable, should be a hearty eater, for just in proportion to her ability to consume and assimilate food will she make returns to her owner for his care and attention. This valuable feature can generally be determined very early in the animal's life. A calf with a dainty appetite is almost sure to retain this undesirable quality after she becomes a cow, while one with a rugged constitution and greedy, always wanting more, becomes the cow with power to consume food largely, and if bred and constructed for dairy work, is the kind that will pay largest returns. These observations are more applicable to Jersey cattle than to Shorthorns, whose value as barrens is an important item of consideration each season. It holds true, however, that a really good milch cow may be used profitably many years, and should not be sacrificed to the butcher when young.—*Farm and Home.*

ARMY VETERINARY SERVICE.

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, Mar. 24.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieuts. to be temp. Capts.:—W. A. Shearer (Jan. 7); W. Anderson, F. Parmiter, M. J. Neely, H. E. McGee, D. V. Reed (Mar. 10); R. E. Leach (Mar. 11).

To be temp. Lieuts.:—P. Carter (Mar. 9); D. Campbell (Mar. 14).

Mar. 27.

To be temp. Lieut.:—P. J. Sheil (Mar. 16).

Mar. 28.

The notification regarding Major W. B. Edwards in *Gazette* of Mar. 22, is cancelled.

Temp. Lieut. to be temp. Capt.:—W. S. E. Morton (Mar. 15).

Temp. Lieuts. relinquish their comms.:—H. S. Ward (Mar. 16); H. Custance (Mar. 18).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Mar. 24.

To be Lieut.:—W. H. J. Kirk (Mar. 17).

Capt. T. Hibberd to be Asst. Director of Vet. Services and granted temp. rank of Major whilst holding the apmnt. (Feb. 6).

EXPEDITIONARY FORCE.

The following casualties are reported :—

DIED—Pte. R. Jones, S.E./9012.

OBITUARY

ARTHUR HASTINGS FARROW, M.R.C.V.S., Commercial St., London, E. Graduated, Lond.: Dec., 1865.

Mr. Farrow's death occurred on the 25th ult., at "Glen Mor," Aldersbrook Road, South Wanstead. He was the youngest son of the late William Farrow, M.R.C.V.S., of Whitechapel and Ratcliffe, E., aged 72. Interred at Manor Park Cemetery, on Thursday.

Private ROBERT E. MORROW, Field Ambulance, 1st Line Scottish Horse, died at the Military Hospital, Devonport. Private Morrow had been pursuing his studies at the Glasgow Veterinary College, where he had a brilliant career, and early in May last he volunteered for active service. He went to the Dardanelles with his regiment, and he was present at the landing at Sulva Bay. Soon after he was invalided home, having contracted fever, and death occurred at Devonport on 15th February.



Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds :—

H. Begg, Hamilton, Lanarkshire	£1 1 0
J. W. Conchie, Kidderminster	1 1 0
W. M. Ferguson, Dundee	1 1 0
F. H. Gibbings, Nottingham	1 1 0
H. J. Holness, Major A.V.C.	1 1 0
G. Howie, Alford, Aberdeenshire	1 1 0
W. Litt, Whitehaven	1 1 0
J. Littler, Oakham, Rutland	1 0 0
S. W. Pratt, Shanghai, China	1 1 0
E. Ringer, Leamington Spa	1 1 0
H. L. Roberts, Ipswich	1 1 0
O. T. Williams, Llangejni, Anglesey	1 1 0
Alfred D. Lalor, Sleaford	2 2 0
W. B. Blunsom, Cirencester	1 1 0
E. V. Hobbs, Capt. A.V.C.	1 1 0
Robert Mason, Helmsley	1 1 0
The Southern Counties V.M.S. (with a promise of an additional £3 3s. before the end of the year)	2 2 0
J. Basil Buxton	5 5 0
E. Whitley Baker, Wimborne	1 1 0
J. Paton, Stevenage	1 1 0
Amount previously acknowledged	71 8 0
	£98 13 0
Anon. (promised conditionally)	5 0 0
J. B. Tutt, F.R.C.V.S. Winchester	5 0 0
D. S. Jack (promised conditionally)	5 0 0

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.		Out-breaks	Slaugh-tered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended March 25	14	18			1	7	54	124	1	105	316
Corresponding week in											
1915 ...	7	7					‡	‡	4	68	286
1914 ...	15	18					32	53	4	94	1129
1913 ...	16	16			10	25	74	144	5	59	1057
Total for 13 weeks, 1916	168	193	1	24	19	60	1011	2507	149	1078	3376
Corresponding period in											
1915 ...	208	228			7	11	‡	‡	134	947	3368
1914 ...	243	261	11	74	26	70	945	1764	134	781	7278
1913 ...	174	191			46	136	1016	2148	105	467	5319

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked :—Derby 1, Stafford 5. Board of Agriculture and Fisheries, March 28, 1916. Essex 1.

IRELAND.	Week ended March 25	...	...	...	...	...	Outbreaks	7	6	20
Corresponding Week in										
1915 ...	...	...	...	...	...	...	2	17	6	33
1914 ...	...	...	5	59	...	...	1	13	11	27
1913 ...	...	...	...	...	...	...	3	11	1	2
Total for 13 weeks, 1916	...	1	5	...	...	...	22	172	59	294
Corresponding period in										
1915 ...	...	1	1	...	...	...	13	175	65	407
1914 ...	...	...	...	52	708	...	29	288	61	317
1913 ...	...	...	...	...	...	...	73	210	38	206

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, March 27, 1916.
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection

CORRESPONDENCE.

CAR LICENSES. COLLEGE ARMS.

Dear Sir,—As a warning to others, I should like to relate what happened to me just lately.

I have a two-seater Darracq, under 16 h.p., for which I paid £4 4s. licence. I received an official letter from Chelmsford shortly afterwards demanding another £2 2s. When I wrote and demurred, a reply came demanding this sum, also another guinea for using the College crest on my writing paper. Am I obliged to pay this latter?

Yours faithfully,

PERCY WELCH.

Vine Lodge,

Saffron Walden, March 29.

PETROL ON GREASY LEGS.

In reply to Mr. Broad's enquiry *re* the above—I have for some time past used Petrol on Greasy Legs and with great benefit. After which I have applied the following once daily:—

Zinc sulph	}	s.s.
Plumbi acet.		3 ss.
Cupri sulph.		
Aqua.		Oj.

Misce.

G. W. ROBERTS, Capt. A.V.C.

Woolwich, March 28th.

THE ROYAL AUTOMOBILE CLUB AND THE PETROL SUPPLY.

Sir,—While the R.C.V.S. deserves the best thanks of every veterinary surgeon who uses a motor car, in its endeavour to obtain from those in authority the assurance of a sufficiency of petrol, it is most comforting to think other and outside bodies take a practical interest in our welfare.

Recently the Committee of the Royal Automobile Club drew up a list of those users of motors whom they considered by reason of their duties deserving of recognition at the hands of the State in their use of private motor cars, and incidentally, of course, entitled to an assured supply of petrol. Among others, we find "Doctors and Veterinary Surgeons" come in for special mention.

As a member of this Club for some years, I may add I have received every help and consideration from its officials at all times, and I have no doubt others can record a similar experience.—I am, etc.,

WM. SCOTT.

Friarn House, Bridgwater, 25th March.

WANTED! LEGGINGS AT THE FRONT.

A distinguished veterinary officer at the front writes me thus:—

"The mud is too appalling, and I am doing my best to get hold of some leggings and mackintoshes for my men. Do you know of anybody who would send me some? Leggings, vests and pants for a change when soaked through are what they need most. They needn't be new, worn ones would do just as well. Even half a dozen sets would be welcome help."

If members of the profession and their friends are willing to help, I shall be glad if they will send their parcels to Mr. HAROLD STANTON, M.R.C.V.S., c/o Messrs. HOBDAI AND BURTON, 165 Church Street, Kensington, W.—Yours truly,

HENRY GRAY.

The Concentration of Vitamines.

In the weekly public health report (Feb. 18th) issued by the United States Public Health Service, Mr. Atherton Seidell, technical assistant in the hygienic laboratory of this service, describes a method which aims at concentrating vitamines. Brewer's yeast is treated in the following way: First subjected to pressure in a hydraulic press for the removal of fluid, the resulting cake is stirred with ice-cold water and again pressed out. It is then brought to a temperature of 37.5°C. and kept at that point for 48 hours, when an autolytic activity takes place, and the material becomes converted to the consistency of thick soup. The fluid is then filtered through folded filter-papers and a clear red-brown filtrate is obtained equalling about 50 per cent. of the weight of the unfiltered material. This fluid keeps for several months if stored in a cool place.

When administered in 1 c.c. doses on alternate days to a pigeon kept on an exclusive diet of polished rice, the bird did not lose weight or show symptoms within at least two months, the period of the experiment. A pigeon kept on polished rice without the yeast filtrate lost weight within the first five days and died with the typical paralysis of polyneuritis.

When 1 c.c. of the yeast filtrate was given to completely paralysed pigeons a relief of this condition occurred within an hour, and to all outward appearances the pigeon appeared to be restored to health within twelve hours.

Mr. Seidell next realised that although this yeast filtrate is very active, an effective dose for a man, based on the amount required for pigeons, would be about 200 c.c. After a number of experiments made unsuccessfully with the view of finding a method of concentration, he turned to the possibility of a medium which might exert a selective adsorption for the vitamines. Fuller's earths were found to remove the vitamines from the autolysed yeast filtrate. The subsequent procedure was as follows: To a large volume of clear autolysed yeast filtrate are added 50 grammes per litre of colloidal hydrous aluminium silicate. The mixture is well shaken and allowed to stand several hours until the supernatant liquid is practically free of suspended solid. The deposit now contains most of the vitamines. The dark liquid is syphoned off, about an equal volume of water added and enough hydrochloric acid to yield an approximately N/100 acid solution. This acid addition serves to expedite the subsidence of the remaining suspended matter. All the sludge is now collected, and after repeated washing with weak acid transferred to a Büchner filter, washed with a little water, and finally with 95 per cent. alcohol. It is then spread out on a paper to permit of the evaporation of most of the alcohol, and finally dried to constant weight in a vacuum desiccator containing concentrated sulphuric acid.

In both preventive and curative experiments made with this material on pigeons the results agreed with those described for the product made with the ratio of 200 grammes of reagent per litre of yeast filtrate. It was found that prompt and effective cures of completely paralysed pigeons resulted from 0.05 gramme doses of the activated solid, corresponding to 1 c.c. of the original yeast filtrate. On the basis of 60 kilogrammes as the weight of man as compared with 300 grammes for the pigeon, an equivalent dose of the activated material would be 10 grammes of the solid on alternate days or 5 grammes per day. According to Mr. Seidell, the material is practically tasteless and odourless, and apart from the vitamines which it contains is said to be an absolutely inert substance, producing no noticeable effects on passage through the

organism. The preparation of other vitamins (e.g. potato) may be carried out on similar lines.

[The colloidal substance or adsorptive agent used is a siliceous mineral the harmlessness of which may be doubted.]—*The Lancet*.

"Unguaranteed" Milk—Conviction Quashed.

The case of Dearden v. Whiteley was heard before the Lord Chief Justice, Mr. Justice Sankey, and Mr. Justice Low, in the High Court. On August 11, 1915, the respondent, an inspector of nuisances for the borough of Rochdale, preferred an information at Rochdale Police Court against the appellant for on July 10, 1915, at Rochdale, having unlawfully sold to the prejudice of the respondent one pint of milk which was not of the nature, substance, and quality demanded by the respondent. The appellant was convicted and fined.

The appellant went about selling milk from a can to which was attached a permanent label in the following words:—"Under the Food and Drugs Act, 1893, all milk sold from this can is more or less diluted and is sold as such; no standard guaranteed."

The respondent after having had his attention drawn by the appellant to this label bought a pint of milk from the can for 2d. The respondent had the milk analysed and the certificate showed that it contained 18.5 per cent. of extraneous water and had been deprived of 14 per cent. of its fat. The justices held that the notice on the can was only a notice that the milk was diluted and was not a sufficient notice of the abstraction of fat, that the respondent was not aware that fat had been abstracted, and that the milk was not of the nature, substance and quality demanded.

Mr. Lowenthal, for the appellant:—According to the authorities the label would have been a defence if the charge had only been one of dilution, but it was urged that it would not cover abstraction of fat. There was no evidence beyond the certificate of analysis that fat had been abstracted; no one had seen it abstracted; there was only an inference by the analyst. As a matter of arithmetic, the mere addition of the stated amount of water would reduce the percentage of fat; but that did not mean that fat had been abstracted. The amount of fat required by the standard was 3 per cent., and here the percentage was 2.58, which would be accounted for by the addition of the water without any abstraction of fat whatever.

Mr. Bailey submitted that the notice of dilution was not a notice of dilution by water; dilution with milk of inferior quality would be included and the proportion of fat would vary accordingly. There was no Act of 1893 such as the label referred to, but in any event where a natural product was being sold it must come up to standard, if there was a standard, unless the fact that it did not do so was made quite clear—(*Souter v. Lean*, 41 S.L.R., 192). The analyst did not say that he based his certificate on the 3 per cent. standard, and if he had, in fact, used a different standard the amount of abstraction certified by him would not correspond to the amount of dilution found. Mr. Lowenthal was not called upon to reply.

The Lord Chief Justice said that the question was whether there was any evidence of an offence under section 6 of the Food and Drugs Act, 1875. The language of the section was important; there must not only be the sale of an article which was not of the nature and quality demanded, but the sale must be to the prejudice of the purchaser. The only evidence was the analyst's certificate, and that showed that without doubt there had been an addition of 18.5 per cent. of water; and allowing for that addition the amount of

fat found in the milk on analysis showed that before the addition of water the amount of fat exceeded the standard amount of 3 per cent. required by the regulation. The only point was whether there was any evidence of abstraction of fat. They could not see any evidence of abstraction. The certificate only showed that the percentage of fat had been reduced, but that reduction would follow from the addition of water. The certificate appeared only to mean that in consequence of the addition of water there was a deficiency in the percentage of fat. That was the whole point, and the conviction must be quashed. The other members of the Court agreed.

The Army Horses' Ration.

In an Army Order recently issued a scale of forage ration equivalents is given in substitution for one previously published. It is also mentioned that green food and grazing should be obtained by special arrangement at the proper time of the year. Further, certain animals in veterinary hospitals will, during some period of their treatment, require special diet, consisting chiefly of bran and long hay. Officers in charge of such hospitals are authorised to draw 25 per cent. of the chaff ration in long hay. It is not intended that troop horses in stables should be deprived of bedding, though straw is no longer available for the purpose. Wherever possible bedding other than straw should be obtained by the troops free of cost. Where this is not possible, the district purchasing officers will, it is notified, arrange for its collection and distribution, the veterinary hospitals having the first call on the supply. Where issues are made, however, at public expense, certain quantities only are admissible, details of which are given in the Order, showing the first issue per animal and the subsequent issues daily. Beanstraw, it is pointed out, should not be used if it is possible to obtain other bedding, as, if eaten by the horses, it is liable to cause colic. The authorisation of the extra issue of 2 lb. of oats to light draught horses should not be in any way restricted in cases of horses which have been clipped or deprived of rugs or bedding on veterinary grounds. Such horses, it is pointed out, require the extra ration in cold weather, as do also backward horses being conditioned for service overseas.

Dog or Fox?

At the Faversham County Court. Arthur Marchant, farmer and auctioneer, Wilgate, Throwley, sued Frank Cobb Mair, a neighbouring farmer, for £18 damages in respect of lambs alleged to have been killed by defendant's dog. The plaintiff lost seven lambs during the last fortnight in January. On the night of February 2 traps were set and the defendant's dog was caught in one of them. No more lambs were missed after the dog had been shot. For the defence it was contended that the dog went to defendant's farm after a collie bitch, and not for lambs, that the circumstances pointed to a fox, inasmuch as a dog would have begun eating the lambs on the spot, and have left some traces, and it was admitted that no traces were found. Held that plaintiff had not proved his case, and judgment was given for the defendant.

Original articles and reports should be written on one side of the paper only and authenticated by the names and addresses of writers, not necessarily for publication.

Communications for the Editors to be addressed
20 Fulham Road, London, S.W.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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APRIL 8, 1916.

VOL. XXVIII.

ACETYLENE FOR RINGWORM AND MANGE.

We have heard no further reports of the treatment of these diseases by acetylene gas, though it is now more than three months since Lieut. Stokoe described and recommended it. Some members must have tried it, on account of the rapid results claimed for it. We have very many remedies of proved efficacy against ringworm and mange, some of them very old ones; but all are more or less "tedious." This method is said to be simple and rapid, therefore it deserves a full trial—which many members have exceptional facilities for giving it. Also, the results of the trials should be made known; though it is perhaps too much to hope that many will be.

One of the best services which a clinician can render to the profession is to systematically test a method of treatment, and publish the summarized results when sufficient experience has been gained. That is, in fact, the special function of the clinician in therapeutic progress; but British veterinary surgeons have never been very ready to discharge it. With some diseases they have the excuse—not at all a satisfactory one, it is true—that a single practice scarcely yields sufficient experience to warrant recording. But with equine skin diseases most of our members in the forces—who number something like one-third of the profession—are seeing more cases now than they ever have, or ever will again. A great deal of work must be done in the army today in the way of testing methods of treating equine skin diseases, including comparative testing; and some of it at least ought to be reported.

MOTOR SPIRIT.

The request of the Secretary R.C.V.S. for full information on the use of motor spirit by members of the profession again appears in our advertisement columns. The desirability of this return should require neither explanation nor emphasis.

CONTAGIOUS ABORTION.

We note this week that another English County Council—Devon, is taking up immunization against contagious abortion. This is good news; for, the larger the number of districts in which immunization is practised, the sooner shall we be able to judge its worth. County Councils may do much good here by influencing farmers, and veterinary surgeons may help by influencing both farmers and members of County Councils. Personal influence in a matter like this may effect more than the official recommendation of the Board of Agriculture.

THE PATHOGENESIS OF MILK FEVER.

Paolo Zoppini, in 1912, published an article on this question (*La Clinica Veterinaria*). In his view, the theories which have been set up of late years, especially by Italian authors, and which regard toxic-bacterial influences as primary causes of the disease and hydraulic-mechanical effects as secondary causes, can no longer be maintained.

The author observed two cases in which tympany was present as a complication of milk fever. In both, the symptoms of milk fever disappeared spontaneously as the distension of the rumen increased, but promptly returned after the tympany had been removed by puncturing the rumen. Both cases were cured by the injection of air into the udder.

In three other cases, milk fever was successfully treated by the insufflation of air; but relapses appeared because the attendants, disregarding their instructions, freely milked out the air-distended udders immediately after the symptoms of milk fever disappeared. These three cases recovered again when the air-insufflation was repeated; and as the milking-out was then not begun till eight hours after the animals had risen, the recoveries were complete and permanent.

The author adds that, when he first practised air-insufflation, he had many unsatisfactory results. He attributes these to blowing in the air either in insufficient quantities, or too suddenly and under strong pressure. Afterwards, when he modified his procedure, and retained the air in the udder for from ten to fifteen minutes by binding the teats, he always obtained satisfactory results.

The author thinks that the surprising alternation of recoveries and relapses within scarcely more than one or two hours seen in the above cases is difficult to reconcile with the theory of toxic or bacterial effects. The cause of milk fever is to be sought much more in disturbances in the equilibrium of the circulation or of the blood pressure, to which the setting in of lactation and the flowing away of the blood which has become unnecessary to the retrogressing uterus act as predisposing causes. If the latter process goes on gradually, with a uniform distribution of blood to all the organs of the body, the alterations of blood pressure adjust themselves to equilibrium. In some cases, as in cows which are good milkers and need very great quantities of blood in the udder, this gradual and equable distribution of blood to the organs is not attained. Then, in the more remote organs, and especially in the brain, a fall of blood pressure occurs as a result of the diminished blood supply

This, when it has reached a certain stage, produces the well-known symptoms of milk fever.

In the cases described above by the author, spontaneous recovery had been brought about by the enormous pressure which the gases in the rumen exercised upon the abdominal vessels, and especially upon the uterine vessels, driving the blood contained in them to all parts of the body, including the brain. The same thing takes place during successful treatment by air-insufflation, in which, however, care should be taken that the air pressure in the udder is produced slowly, is strong enough, and is maintained for a considerable time.—(*Berliner Tier Woch.*)

SPASM OF THE OESOPHAGUS IN A HORSE.

Barton records the case of a horse which, before undergoing an operation, was given 20 grammes of sulphonal in 100 grammes of bran, and then thrown (*Rev. Vet. Milit.*) During the operation the animal was very restless; and it was necessary to employ great force in order to control the head and neck. The horse was got up and taken into his box, where he commenced to eat hay. At the first mouthfuls, however, he suddenly stopped masticating, the expression became extremely anxious, and the limbs were held rigid. The head was held very high; and the neck, which was considerably extended, underwent spasmodic jerky movements which were afterwards communicated to the whole body, and were accompanied by groaning sounds. These spasms were followed by abundant bilateral nasal discharge of a greyish-white viscous material of salivary appearance, which was succeeded by an inodorous mucus, greenish in colour on account of the portions of masticated hay which it contained.

During three-quarters of an hour these attacks were repeated a dozen times, with progressively decreasing intensity. Each time the material discharged was less abundant and more clear; and in the last attacks the discharge consisted of pure saliva.

Some hours afterwards the only symptom that remained was a slight dulness, and no points of tenderness could be found. Three days later, a myositis of the cervical region became clearly manifest.—(*Revista de Veterinaria Militar*).

[Spasm of the oesophagus is rare in animals. It has been seen in horses after the injection of morphia and after chloral hydrate or chloroform narcosis, but not, so far as I know, after the administration of sulphonal. The present case seems rather to have originated in injury by the force used to control the head and neck.—*Transl.*]

AUSCULTATION OF THE PREGNANT UTERUS.

Some years ago Prof. Albrecht published some researches upon this subject (*Munch. Tier. Woch.*) His experiments went to confirm the results previously arrived at by Dennhardt and also by Zieger. He attempted to discover whether the uterine sounds in pregnant cows, goats, and sheep are to be heard by means of a stethoscope introduced into the vagina; and his results were always positive. The stethoscope he used for cows was 50 centi-

metres long, and 8 centimetres thick; and that used for small ruminants was 27 centimetres long and four centimetres thick. The instrument consisted of a metal tube with a thin rubber membrane at one end, and a funnel for applying to the ear.

The stethoscope, and the vulva and its vicinity, was washed and disinfected before the instrument was introduced. The lips of the vulva were drawn apart by an assistant. The stethoscope was then slowly passed to the portio vaginalis uteri, and its anterior end was applied to different places of the oral division of the vagina.

In those cases in which Albrecht heard the uterine sounds very distinctly on one side of the animal, and indistinctly or not at all on the other side, the foetus lay on the side of the clear sounds.

Albrecht suggests that perhaps a newly constructed stethoscope, after the pattern of a phonendoscope, might render it possible to demonstrate pregnancy at an early stage. Perhaps it might also be possible, especially in small animals, to demonstrate the uterine sounds by auscultating the abdominal wall with an appropriate instrument.—(*Berliner Tier. Woch.*)

EPILEPTIFORM ATTACKS IN EQUINE PASTEURILLOSIS.

Fontaine records these observations (*Rev. Vet. Milit.*) In seven cases of equine pasteurilosis, he has seen transient nervous symptoms in the form of epileptiform crises. These appeared at the period when the disease was declining, and in horses which were severely affected. All the horses recovered.

The attacks came on between the tenth and twelfth day of the illness, in the following manner. At first the horse appeared somnolent, and rested the body-weight upon the fore limbs. After a few minutes, he fell to the ground. All the muscles became contracted, the limbs were held rigid, the respiration was accelerated, and the membrana nictitans almost covered the eyeball. The attack lasted a few seconds, or rarely a minute; and, when it terminated, the horse neighed plaintively. Within twenty minutes, the animal recovered its normal condition. These attacks, which were undoubtedly of toxic origin, were repeated frequently.—(*Revista de Veterinaria Militar*.)

W. R. C.

ANNUAL REPORT OF THE CAMEL SPECIALIST, PUNJAB, 1915. H. E. CROSS.

In connection with the question as to whether other animals are susceptible to camel surra only a small number of experiments could be carried out, on account of pressure of other work. The results appeared to indicate that dogs are susceptible, but goats insusceptible. One experiment was carried out in which the camel strain was passed through a pony and then again inoculated into a camel. This single result appeared to indicate that passage through a pony attenuates the virus for the camel.

Treatment. Sixty-eight animals were treated by the "arsenic alone" method or by the "arsenic and

soamin" method. Of these 54 were reported as cured and 14 died.

Experiments in the treatment of the disease have been or are being carried out. Iodine, carbolic acid, sodium bicarbonate, potassium permanganate and borax have been tried, but no good results have been obtained with any of them.

With a view to protecting camels from the bites of blood-sucking flies a number of investigations were made into the properties possessed by various substances for this purpose.

The conclusion arrived at was that the only emulsion that was of any use was one of chirpine oil in the proportion of 20 to 40 ounces to a gallon of water. The amount sprayed on each camel should be about four pints. Even this emulsion was not of any great value from a practical point of view as it was efficient for only about three hours. If the emulsion was made with 80 ounces of the oil to two gallons it was found that blistering of the skin resulted.

Inspection of castrated camels indicated that those castrated at seven years and upwards were much better animals than those operated upon earlier.

Experiments showed that the best purgative for camels is magnesium sulphate, the dose being from $1\frac{1}{2}$ to 2 pounds. Next in order with the doses are: Kamala, 8 ozs.; croton oil, $3\frac{1}{2}$ drachms; aloes, $3\frac{1}{2}$ ozs. of solution; gamboge, 3 ozs.; and linseed oil, 4 pints. Two grain doses of eserine and pilocarpine given subcutaneously give satisfactory results.—*Tropical Veterinary Bulletin.*

IMPORTANCE OF 24-HOUR TEMPERATURE RECORD IN TUBERCULIN TEST IN CATTLE.

The following passages occur in a series of investigations on Clinical Thermometry, by G. SIMS WOODHEAD, Professor of Pathology, Cambridge, and P. C. VARRIER-JONES, from the Pathological Dept., Univ. of Cambridge, under the sub-head of "Value of Quasi-continuous temperature record method in Study of Tuberculosis." The series were published in *The Lancet*, between Jan. 22 and March 4.

"In the *Journal of Comparative Pathology and Therapeutics*, 1915, vol. xxviii., p. 337, et seq., we have insisted upon the importance of obtaining a continuous temperature record when carrying out the tuberculin test in cattle, and have given a full account of the details to be attended to in making such a test. Here it must suffice to give a record of the action of a full diagnostic dose of tuberculin upon healthy and tuberculous cattle. It is evident that in the healthy cow the rise of temperature following the administration of a full dose is very slight, that the rise appears at the next milking, feeding and watering period, between five and six hours after the injection, that it lasts for a short time only, and that at no time does it exceed 0.2° F., beyond the temperature recorded the preceding day. There was no repetition of the rise on the succeeding day at the corresponding hour, the temperature remaining normal. A calf similarly treated gave similar results. Tuberculin in full diagnostic doses, then, exerts but a very slight and transient effect upon healthy bovines of whatever age.

Reaction in Tuberculous Animals.

The temperature curve of a tuberculous animal to which a similar dose of tuberculin is administered is,

however, as in the human subject, absolutely characteristic. In order to demonstrate this as clearly and conclusively as possible, we first tested the tuberculin reaction of a calf that had been rendered tuberculous for experimental purposes. After a 24-hour temperature record had been obtained, 6 c.c. of tuberculin was injected subcutaneously, and during the succeeding 48 hours a continuous temperature record was made. We have first the pretuberculin temperature record, then that after the injection of tuberculin at 10 a.m.—a most characteristic tuberculin curve. Immediately after the injection of the tuberculin comes a rapid rise— 1.2° F.—beyond the temperature recorded at the corresponding hour, noon, the previous day—i.e., there is within a couple of hours a considerable interval— 1.2° , between the normal and tuberculin curves. An hour and a half later the difference between the corresponding time points on the two curves is only 0.8° . At 9.30 p.m., $11\frac{1}{2}$ hours after the injection of the test dose, the temperature has reached 105.3° , and the difference between the normal and the tuberculin temperatures is 2.8° . Then, although the temperature of the tuberculinised calf falls to 105° during the next half hour—i.e., just 12 hours after injection—the difference between the pre- and the post-tuberculin temperatures has risen to 2.9° . From this point onwards the tuberculin temperature curve assumes a very interesting form. In a very definite, though not regular, falling line we have until 6.30 a.m. a series of upward peaks or teeth. Then for an hour it remains almost stationary; but after this there is a further fall of 0.2° , due apparently to the ingestion of food the temperature of which is below that of the body. From 8.30 to 9.30 a.m. there is a rise of 0.6° , but immediately following the watering of the animal there is a fall of 1.4° , this indicating a very marked instability of the temperature, even 24 hours after the exhibition of the tuberculin.

In view of this continued instability it was decided to continue the record for a second 24-hour period. It was then found that even at the end of that period, the unstable condition continued. Further, the temperature was not only unstable, it remained at a markedly higher level than that attained in the pre-tuberculin period. It is a feature of special interest that not only was the mean temperature higher than normal even in the second 24 hours of the post-tuberculin period, but the variations were far more marked than in any period and under any conditions in which the animal was placed in the pre-tuberculin 24-hour period. The temperature was in a state of unstable equilibrium, was easily and profoundly affected by any of the factors that ordinarily set up far less marked, though, as above noted, distinct variations.

So marked is this feature that in the paper previously referred to we "insist that evidence of a tuberculin reaction is to be sought, not in the number of degrees recorded, or even in the difference in temperature at single intervals in the pre- and post-tuberculin periods [important though these undoubtedly are], but in the nature of the two curves as a whole, and when studied together. To begin with, far more marked fluctuations, especially as the result of exercise and of watering, are met with in the post- than in the pre-tuberculin period; whilst a feature that distinguishes most markedly the tuberculin temperature curve in a tuberculous animal from that in a 'normal' animal is the distinct, though 'intermittently continuous' rise, and the equally 'intermittently continuous' fall."

What Constitutes a Positive Reaction?

"Having obtained such marked and characteristic reactions in the tuberculous calf, and in order to submit our provisional conclusions to a practical test, we determined to experiment on an adult animal, a cow, that we looked upon as being tuberculous (it had some

months previously been injected with a full dose of tuberculin and the temperature had been taken at four-hour intervals with a mercury clinical thermometer). Some doubt, however, existed as to the accuracy of the diagnosis, and we certainly had no information as to how the animal was supposed to have contracted the disease. A couple of 24-hour records were obtained before the tuberculin was injected, and the curves were practically identical, only the normal variation appearing in each. At 3 p.m. a full dose of 6 c.c. of tuberculin was again given. Three hours later the temperature began to rise in the characteristic 'wavy' or 'toothed' fashion, reaching a maximum—103° F.—six hours after the injection. Although there followed a slight fall, a kind of plateau line was maintained, but with small remissions, until 2.30 a.m. Though remaining high for a night temperature, it then fell into a series of diminishing waves until at noon it had reached its normal level and there continued.

Were we to consider this a 'positive tuberculin reaction'?

It is usually accepted that a reaction should be considered positive if there is a rise of temperature of 1.6° F. above the maximum of the two preceding days—i.e., we adopt a relative standard. All these observations accord well with what we have observed in the human tuberculous subject, in whom even very small doses of tuberculin produce very great instability of temperature. So noticeable is this, indeed, that we feel justified in accepting this feature, along with the steadily rising and then falling curve, as constituting even more important diagnostic factors than the actual rise of temperature at any one point.

Injections of tuberculin into normal bovine animals are followed by a rise of 0.8° C. (1.4° F.) or more in only 12 per cent. of the cases so treated. A rise of 0.9° C. (1.62° F.) or more was recorded in five cases only, or 4 per cent. of a whole series. Applying these figures to the test now under consideration, we should be compelled to admit that at the end of the first four hours there is no appreciable reaction, and that for the next 10 hours there are only five half-hour periods in which there is a distinct tuberculin temperature reaction. One occurs at 10.30 p.m., 7½ hours after injection, and would be missed in any series of four-hourly observations, and four between 12.30 a.m. to 4.30 a.m., again half an hour before the third four-hourly period usually allotted to the taking of the temperature. When, however, we come to study the complete record, and note the difference between the highest temperature reached and the temperature at the corresponding time of the previous day, we may well be satisfied that the reaction is "positive"—i.e., in the normal and tuberculin diurnal curves the difference in temperature at the corresponding points on the curves exceeds the amount set up by the members of the Royal Commission on Tuberculosis as the standard for a positive reaction, especially as it is evident that this excessive difference really extends over several hours, and we must come to the conclusion that the cow was tuberculous.

The Normal Diurnal Variation.

This brings us to the question, How far must the normal diurnal variation be taken into consideration when interpreting the 'tuberculin temperature' in fixing a standard for a 'positive' tuberculin test?

In the first place it is evident that the normal diurnal variation may not be without effect upon the tuberculin temperature, and this being the case the time at which the tuberculin is injected cannot be considered to be a matter of indifference when we are called upon to determine whether we have a positive reaction or not. The conclusions at which we have arrived as a result of our observations incline us to agree with Cobbett and S. Griffith,* that the test injection may be so timed that

the maximum rise of temperature caused by the tuberculin will coincide with the maximum rise due to the normal diurnal variation. In such a case we should, of course, expect a greater total rise of temperature than when the upward movement caused by the tuberculin is neutralised by one or more of the several causes of the diurnal downward variation. Bearing this in mind, we are bound to recognise that it may be necessary for us to revise our interpretations of these temperature records, especially in 'doubtful' reactions. It may not be, and probably is not, sufficient to rely on the chance of obtaining the difference between the maximum temperature for the 24 hours preceding the injection of tuberculin and that of the succeeding 24 hours.

The temperature at each period would have to be compared with those taken at the corresponding periods during the 24 hours after injection—i.e., the highest temperature obtained after injection would have to be compared with the temperature attained at the corresponding time in the preceding 24 hours, a comparison impossible of attainment without having access to continuous or quasi-continuous records; for although it is known that the maximum temperature after an injection of tuberculin is usually attained between the sixth and twelfth hours, important exceptions to this rule are often met with; and it is obviously out of the question with an ordinary clinical thermometer, even when the temperature is taken at four-hourly intervals, to be sure of 'catching' the temperature at its maximum. And even were this attainable, it would still be impossible to determine the point of time in the preceding 24 hours with which to make a comparison. Indeed, from a study of any of our charts it is evident that, using the four-hourly method of taking temperatures with the ordinary clinical thermometer, it is not difficult, nay, it is a very easy matter, for the observer to miss a rapid rise or fall—a rise or fall which occurs time after time in every temperature curve yet obtained by us in carrying on our tuberculin experiments."

Under the heading of "Conclusion," the authors say:—

"We recognise that in the rough and very imperfect sketch of the history of thermometric methods, and the scanty matter we have used to illustrate the value of the quasi-continuous temperature record, we have left much room for criticism and improvement. Our object, however, was, after giving a short résumé of the history of the clinical thermometer in its various forms, to indicate the value of these continuous records in the study of the temperature phenomena that are already considered to be of importance, as indications of the presence of various disease processes. This we considered would be best done by giving a series of charts from normal individuals, from tuberculous patients, human and bovine, suffering from uncomplicated tuberculosis, and from tuberculosis combined with septic mischief, from tuberculosis from which the natural absorption of tuberculin has been induced, and from tuberculosis in which a tuberculin reaction from artificial injection of tuberculin has been set up. Our interpretations may be erroneous, but the records are there to be studied by those who are interested and whose experience and knowledge will enable them to give opinions of value.

In the course of our work we have become convinced that there is still much to be learned from a close study of continuous thermometric records taken from cases suffering from diseases of which the clinical symptom-complexes are similar, but of which there are now and again, slight, or in some cases even marked differences.

* L. Cobbett and A. Stanley Griffith: Royal Commission on Tuberculosis, Final Report, Part II., Appendix. Supplemental Volume. Report on Tuberculin Tests, London, 1913, p. 18.

ON THE MOVEMENTS OF THE ISOLATED SMALL INTESTINE AND THE ACTION OF VARIOUS DRUGS AND EXTRACTS UPON THEM.

The gut of the cat was found most suitable. Pieces of a certain length were placed in a modified Ringer's fluid and the movements recorded. The method employed for these isolated pieces of intestine was a modification of that of Magnus. Carbon dioxide has an inhibitory action on both the tone and movements of the intestine. If the action of CO₂ is prolonged the intestine is permanently injured and eventually killed. Hyoscyamine has a stimulating action; it can initiate the movements when they are absent. The pendulum movements are increased in size and made more regular, the tonus oscillations being partially or completely abolished. Stimulation is seen with 0.001 per cent. of concentration. Hyoscine has an action similar to that of hyoscyamine, but it is weaker, 0.02 per cent. being the weakest concentration having a distinct action. Both drugs inhibit the stimulation produced by pilocarpine. Cocaine has a stimulating action in strength from 0.001 per cent. to 0.01 per cent.; with higher concentration no stimulation is seen, but a marked regularising effect then appears; with 0.2 per cent. a paralysing of the intestine comes on. Inhibition of the action of pilocarpine does not occur. Choline produces a marked rise of tone in the isolated intestine; this occurs with a concentration of 1 in 50,000; with high concentration the pendulum movements are obliterated. Atropine inhibits the action. There is also mutual antagonism between the actions of choline and adrenalin. Neurine in its action resembles choline, but it is more powerful; 1 in 100,000 produces an effect. Watery extract of the posterior lobe of the pituitary body has the effect of raising the tone and causing the development of large tonus oscillations. The action occurs only with high concentrations; thus two glands per 100 c.c. of Ringer's solution is the weakest extract to give definite results. Alcoholic extract has no action. Hemisine causes inhibition of the movements and lowering of the tone of the intestine; 1 in 10,000,000 produces a small but distinct effect. Extracts of spleen, thyroid and thymus, pancreas, liver, kidney, and brain give no definite results. Stomach contents inhibit the movements by their acidity alone. The contents of the small intestine have often a marked stimulating effect apart from, but to a considerable degree influenced by, their reaction. Extract of digesting gastric mucous membrane and of mucous membrane of small intestine, and also secretin, have, when neutralised, no definite action. Pancreatic secretion increases the tone. Indol inhibits the movements and lowers the tone. Bile has a similar action. A number of other substances were studied.—ALEXANDER WAUGH YOUNG, in *Quarterly Journal of Experimental Physiology*.

On the Applications of Eusol.

The following concludes the Report to the Medical Research Committee. The Report is signed on behalf of the Edinburgh Committee by the chairman, Major James Hodsdon, President of the Royal College of Surgeons of Edinburgh.

Details are given of a number of cases grouped under seven headings, and the report continues:—

"Further clinical experience of eusol in a great variety of cases has proved it to be a non-toxic, non-irritating, and efficient antiseptic. Nothing in this experience has been more striking than the fact that while it is highly destructive to bacteria, it is non-toxic to the tissues. In eusol free hypochlorous acid is the most essential ingredient, but there is present also a sufficient quantity of bborate of calcium to give the solution a reaction alkaline to litmus. This feebly alkaline solution can be introduced into wounds or serous cavities with

perfect safety. It can even be left in such cavities in quantity without any harmful effect. In lacerated and contused wounds, and in compound fractures, such as are met with in military practice, it is the most efficient antiseptic we possess.

It is most efficacious during the period of what might be termed progressive sepsis. Some surgeons have emphasised the benefit of modifying the treatment when sepsis is subsiding or has ceased. The granulations form after a period of two to three days, and rapidly cover the surface of the wound. Any tendency to superabundant growth of granulations and consequent delay in healing can be counteracted either by so applying the eusol that the serous discharge is reduced to a minimum and the wound is kept dry, or by discontinuing eusol and using other dressings appropriate for healing wounds. In any event the sepsis is by this stage completely under control.

The freedom which can be exercised in the application of eusol, and the rapid action which it has in arresting the sepsis and discharge of an infected wound, led to experiments on the effect of eusol on the blood. Following on this eusol was employed in the treatment of general septic toxæmia by intravenous injection.

This method was first made use of by Lorrain Smith, Ritchie and Kettie, in a case of grave puerperal septicaemia, and the result was the recovery of the patient. They have applied the treatment in other similar conditions. In several cases toxæmia has been successfully overcome, and although such a result has not been uniformly attained, the safety of the method justifies its being applied in the diseases referred to in their preliminary communication. Intravenous injection has also been applied with success by Captain Fraser and Captain Bates in cases of acute toxæmia secondary to gas gangrene.

Further research is now being carried out on the development of the subject foreshadowed by these investigations.

Some practical considerations remain. Hypochlorous acid is an extremely active bleaching agent, and it should therefore not be brought into contact with coloured fabrics. Further, if cloth is kept in the solution for some time its fibres are made brittle from destruction of the texture. Any towels, etc., which become wetted by the lotion should be forthwith rinsed in a large quantity of water to remove the acid as rapidly as may be. It also is corrosive to metals; instruments, needles, etc., should be carefully treated, else they will rust.

The lotion is exceedingly inexpensive. The ingredients are procurable everywhere at a slight cost, and the preparation is a very simple process. At the present time especially it will be found that the introduction of eusol will effect economy in the outlay for the treatment of septic wounds, a point of considerable importance, since phenol and its derivatives are becoming increasingly difficult to procure.

Finally, it may be useful to set forth the details for preparing the antiseptic. Eupad powder is composed of equal weights of boric acid and bleaching powder. The boric acid is in sufficient excess to set free the hypochlorous acid in the solution. The bleaching powder should be dry and should contain 28 to 30 per cent. available chlorine.

The solution eusol is prepared as follows: Add to 1 litre of water 25 grammes of the powder; shake well and allow it to stand an hour; then filter. The clear solution is eusol, and contains about 0.5 per cent. hypochlorous acid. If the bleaching powder is old or not up to the strength given above, use a larger quantity of the powder.

A rough-and-ready method of preparation is to add $\frac{1}{2}$ oz. of the mixed powder to 1 pint of water; stir or shake and allow the sediment to settle.

In cold weather the solution will keep its strength for three weeks; in hot summer weather it loses its strength more rapidly, and should not be kept more than one week. It keeps best in bottles of coloured glass in a dark cupboard.

For use as a lotion the solution must be warmed. This may be done by placing the bottle in a basin of hot water, or the solution may be made double strength (50 grammes to the litre) and diluted with an equal volume of hot water. The double-strength solution will not keep its value for more than two days."

The White Man in the Tropics.

Although there are many who still deny that the white man can ever establish himself permanently in the tropics, Sir Patrick Manson believes that successful colonization in hot climates is a matter of acquisition of knowledge as to the conditions of healthy life and of the practical application of that knowledge. The problem is largely one of the discovery of efficient means of protection against the many microscopic enemies which almost seem to resent the invasion of the tropics by the white man. The poisons injected by these organisms vary in their nature and composition, but to all of them in general may be applied almost literally the description of the "leperous distilment" poured into the ears of Hamlet's father:

whose effect
Holds such an enmity with blood of man,
That swift as quicksilver it courses through
The natural gates and alleys of the body,
And with a sudden vigour it doth posset
And curd, like eager droppings into milk,
The thin and wholesome blood.

Less than a quarter of a century ago no systematic attempt was made to fight these scourges, and men went to the tropics in a fatalistic spirit that led them to gamble their lives against the too likely chance of disease and death. Now all this is changed, and many vigorous campaigns are being conducted for the sanitary reclamation of the tropics. Already much has been done, notably in the prevention of malaria, a disease which has made waste some of the fairest and most fertile parts of the earth, and which has caused the ruin of flourishing states. Of its devastating effects the most terrible example is seen in the decay of ancient Greece. We need only recall here the chief triumphs of modern science in the domain of tropical medicine. The most conspicuous of these has been the banishment of yellow fever from Havana, and the sanitary cleansing of Panama where yellow fever, malaria, dysentery, and other diseases had defeated the enterprise and skill of the French engineers, who would doubtless, but for these scourges, have succeeded in making a canal through the isthmus. The French effort was baffled by the conditions which at that time made the Panama zone a most active breeding ground of the germs of tropical disease. That the Americans succeeded where the French failed is due to the progress of medical science and the application of the knowledge gained by research.

In an address delivered by General William C. Gorgas, a man who combines in a rare degree scientific resourcefulness with the power of organising victory as a leader of men, which appeared in the *Boston Medical and Surgical Journal* of August 5th, 1915, he says:—

"The real scope of tropical sanitation, which has been almost entirely developed within the last fifteen or twenty years, I believe will extend far beyond our work at Panama. Everywhere in the tropics, to which the United States has gone in the past fifteen years, it has been shown that the white man can live and exist in good health. This has occurred in the

Philippines, in Cuba, and in Panama, but the demonstration has been most prominent and spectacular at Panama, and therefore has attracted there the greatest world-wide attention. Here among our large force of labourers we had for ten years some ten thousand Americans—men, women, and children. Most of these American men did hard manual labour, exposed to the sun, rain and weather conditions day in and day out, yet during that time their health remained perfectly good, just as good as if they were working at home. The same remark as to health would apply to the four thousand women and children who lived at Panama with their husbands and fathers. Both the women and children remained in as good condition as they would have been had they lived in the United States. This condition at Panama, I think, will be generally received as a demonstration that the white man can live and thrive in the tropics. The amount of wealth which can be produced in the tropics for a given amount of labour is so much larger than that which can be produced in the temperate zone by the same amount of labour that the attraction for the white man to emigrate to the tropics will be very great, when it is appreciated that he can be made safe as to his health conditions at a small expense. When the great valleys of the Amazon and of the Congo are occupied by a white population more food will be produced in these regions than is now produced in all the rest of the inhabited world."

[British East Africa is on the equator. Egypt and India are between 10° and 20° N. Lat: and all Northern Australia, and S. Africa north of Cape Colony, between 10° and 30° S. Lat.].

A Treatment of Pellagra.

Pellagra is a disease which, so far, appears to have little direct interest to the veterinarian, although the more prominent theories concerning its etiology point to a dietetic origin. The suggestion of Dr. Sambon that it is carried by the simuliæ lacks confirmation. But the problem has proved so elusive that it must possess interest to every student of medicine, human or veterinary.

"In 1914, Dr. G. Alessandrini and Dr. A. Scala published an account of their researches which showed that silica in a colloidal state produced in various animals an intoxication in which the clinical picture and pathological lesions corresponded completely to those of pellagra.* They, moreover, demonstrated that by causing monkeys to drink the opalescent water of pellagrous districts, which is also drunk by the inhabitants, a similar intoxication results. They came to the conclusion that the cause of this disease was the silica, and probably also the silicates, existing in the drinking water in a state of solution or colloidal suspension. They added, however, that not all water which contained silica will cause this intoxication, since the silica is capable of forming, like the colloids, unstable combinations with the electrolytes, and these combinations may be innocuous. They said, further, that carbonate of calcium and the alkaline carbonates prevent the toxicity of the silica.

Dr. Alessandrini and Dr. Scala now state in a further communication (*Il Policlinico*, Practical Section, Jan. 16th, 1916), that it is not sufficient to assert that their conclusions do not merit consideration simply because the cause of pellagra is incontrovertibly connected with the consumption of maize, every part of which has been minutely analysed and experimented upon, without giving the clear, striking, and broad results obtained by them in their experiments. Neither is it a valid objection which has been put forward by

* New theories and investigations concerning Pellagra. *V.R. (ex Lancet)*, May 22, 1915, p. 297.

Sandwith that in Egypt, where pellagra is also found, there are no areas of silica, for the reason that the water of these localities has not been examined, and that it has never been denied that argillous strata exist in which the water lies which afterwards forms into springs and from which they may be contaminated. Besides, it is incredible to them that a desert soil like that of Egypt should be wanting in silica.

In their former communication Dr. Alessandrini and Dr. Scala referred to ten cases of pellagra cured by intramuscular injections of sodic citrate, 1 c.c. of an aqueous solution of 10 per cent., leaving the patients in their original surroundings, at their ordinary occupation, and on their usual scanty diet. They have now collected a further number of cases from various parts of Italy in the same manner. In 44 out of 50 thus treated excellent results were obtained, especially when it is noted that there was no other factor to cast doubt on the curative effect of the remedy. Of the remaining six cases, in three a marked improvement in the general condition was observed, although the cutaneous manifestations were but slightly improved. Of the other three, only one could be said to give an entirely negative result, and in this chronic articular rheumatism and endocarditis existed, while another was of advanced age and was subjected to a limited number only of injections.

The observers express the hope that extended trials will be given to this treatment, believing that, if the theory of the cause of pellagra is not recognised as proved, the benefit of the method will be more largely taken advantage of. Then, where possible, the drinking water of pellagrous districts will be purified.—*The Lancet*.

Goods sold and not accepted—Duty of seller.

At the Holbeach County Court, Edmund Hebblewhite Todkill, of Sutton Bridge, sued Thomas Church, of Peterborough, for £9 13s. 6d. for apples and plums sold and delivered last September, and for £6 for damages for defendant's failure to accept certain apples sold to him by plaintiff. After evidence had been heard;

Judge Mulligan pointed out that an account for apples and plums sold, for which the £9 13s. 6d. was charged, was duly delivered to defendant, and that he subsequently wrote promising to send cheque. It was, therefore, clear that the £9 13s. 6d. was due, and he gave judgment for plaintiff on that item. With regard to the claim for damage it was the duty of a seller not to allow goods sold but not accepted by the buyer, to waste. The plaintiff should have given the defendant notice to accept delivery, and if the apples were not taken within a reasonable time, he should have resold and obtained what he could for them. At the present time particularly this course must be adopted to save any waste of the food supply of the nation. He found from plaintiff's evidence that he could have resold for £1 10s., but plaintiff would have had to pay for picking, 7s. 6d. He, therefore, gave judgment for the plaintiff on the item of £6 for £4 17s. 6d., being the amount of the claim less £1 2s. 6d., the sum which should have been realised on re sale, with costs.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, Mar. 29.

REGULAR FORCES. ARMY VETERINARY CORPS.

Capt. G. E. Tillyard to be temp. Major whilst in charge of a Vet. Hospital (Feb. 1).

Mar. 30.

Temp. Lieut. W. A. McGill relinquishes his commission (Mar. 18).

April 1.

Temp. Lieut. to be temp. Capt.:—H. Burrell (Mar. 16).

To be temp. Lieut.:—W. L. Little, F.R.C.V.S. (Mar. 20).

To be temp. Qrmr. with hon. rank of Lieut.:—C. G. Kimber (April 1).

Mar. 29.

Capt. F. Walsh, Canadian A.V.C., to be temp. Major whilst Asst. Director of Veterinary Services (Jan 12)

April 4.

Temp. Lieut. to be temp. Capt.:—G. A. Rose (Mar. 10).

April 5.

To be temp. Lieuts.:—D. Wylie (Mar. 23); J. F. Macdonald (Mar. 24).

MEMORANDA.

Col. E. H. Hazelton to be temp. Brig-General whilst employed as Prin. Vet. Officer in India (April 5).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

April 5.

To be Lieut.:—J. A. Matheson (April 6).

The following has been mentioned in dispatches from the General Officer commanding for services with the operations in Mesopotamia, from 6th November, 1914, up to 14th April, 1915:—Major W. S. Anthony.

The A.V.C. Comforts Fund.

Dear Sir,—I have pleasure in sending you further lists of subscriptions received and kind contributions sent in parcels.

I am glad to receive any gifts which are sent in to me for our men on active service, but I am advised not to send out further supplies of warm clothing at present—excepting socks, which are always in demand. Mufflers, helmets, mittens, gloves, etc., will be kept over until next season, and I shall be glad to have as large a supply in as possible so that comforts may be sent out early in the winter.

I should like to take this opportunity to again thank all those many kind contributors who have helped us so substantially during the winter.

In the near future I hope that it will be possible to arrange a little meeting of the subscribers to the Army Veterinary Corps Comforts Fund, so that I may have the pleasure of laying a report of the work and balance sheet before them.—Yours truly,

ADELAIDE M. MOORE.

Strathyre, Parsifal Road,
Hampstead, N.W.

April 5th.

Further Contributions received to April 5th:—

	£	s.	d.
Miss Whitaker		10	0
Mr. Arthur Burgon, M.R.C.V.S.	1	1	0
Mrs. George Male, Reading	1	1	0
Mr. Harold Morpew, M.R.C.V.S.	1	0	0
Mrs. Yates		5	0
Mrs. Sam Walker, Colwyn Bay	1	0	0
Mr. James Thomson, M.R.C.V.S., Bervie	2	2	0
Mrs. Lane, Warminster		5	0
Major-Gen. F. Smith, C.B.	2	2	0
Mr. Jackson Young, F.R.C.V.S., Northampton	1	0	0
Mr. R. MacGregor, M.R.C.V.S., Mkt. Harboro'	2	2	0
Mr. J. F. Rees, M.R.C.V.S., Carmarthen	1	1	0

per Col. Queripel (from Capt. Tagg, Officers, N.C.Os. and men, Home Counties, Divnl. Vety. Hospital, Aylesford)	5 8 0
per Secretary R.C.V.S. (from Mr. G. W. Stur- gess, M.R.C.V.S.; Mr. W. A. De Silva, Messrs. Pate & Sons, Messrs. W. Wallis and Co., Mr. T. A. Pate, India & Ceylon)	3 14 0
	£27 6 0

Further Parcels received to April 5th:—

Mr. John Perry, M.R.C.V.S.: Packs of cards	
Mrs. Hibbard: Helmets. Miss Melboom: Socks	
Mrs. A. N. Garland: Shirts, mufflers, helmet	
Mrs. Garnet: Socks, helmets, mufflers	
Mr. G. H. Gemmell, F.I.C., F.C.S.: Mits, socks	
Mrs. Shipley: Muffler, socks, helmet, mits.	
Mrs. A. Cowan: 60 pr. socks (wool supplied)	
Mrs. Fearnside: Socks. Mrs. McGowan: Socks	
Mrs. Russell: Socks, gloves, mits.	
Miss Hinxman: Muffler. Miss Joyce: Cuffs	
Mrs. Hamilton: Socks, mufflers, mits.	
Mrs. Leckie: Shirts, mufflers, mits., socks	
Mrs. Berrie Biddell (per Mrs. Ascott): Waistcoat, mits., socks, helmets, mufflers	
Mr. & Mrs. W. G. Kennett: Cigarettes, muffler, books	
Mrs. Ecroyd: Magazines, stationery.	
Mrs. Clayton: Mufflers, caps, socks	
Mrs. Heyland: Socks.	

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donations are reported:—

Brig.-Gen. J. Moore, Director of Veterinary Services, Headquarters, B.E.F., France	£3 3 0
Mr. J. F. Rees, Carmarthen	2 2 0
Mr. C. W. Wilson, Meerut, India	1 1 0
Mr. C. H. Stephens, Girgaum, Bombay	3 0 0
<i>Veterinary Surgeons in Ceylon:—</i>	
Mr. G. W. Sturgess	
Mr. W. A. De Silva	
Messrs. Pate & Son	
Messrs. S. W. Wallis & Co.	8 17 9
Mr. T. A. Pate	
Mr. E. T. Hoole	
Major T. Bone, A.V.C.	2 0 0
Capt. S. W. Marriott, A.V.C.	2 2 0
Previously reported	101 17 0
Total	£124 2 9

OBITUARY

T. S. SNARRY, M.R.C.V.S., Malton, Yorks.
Graduated, N. Edin.: Dec., 1889.
Mr. Snarry's death occurred on April 3rd. Aged 49.

Personal.

COLLISSON—LARNDER. On the 21st March, at St. John's Church, Putney (by licence), by the Rev. Canon Williamson, Vicar of St. Margaret's, Ipswich, uncle of the bridegroom, assisted by the Rev. R. T. Gardner, Fulham, Percival Lorimer, eldest son of the late Rev. S. G. Collisson and of Mrs. Collisson, Bristol, to Stella Mary, elder daughter of Lieut.-Colonel E. W. and Mrs. Larnder, St. Mary's House, York.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds:—

W. J. Boyd, Ledbury, Hereford	£1 1 0
C. W. Cartwright, Capt. A.V.C.	1 1 0
H. Dyer, Blackheath, S.E.	1 1 0
W. W. Grasby, Daventry	1 1 0
E. V. Hobbs, Capt. A.V.C.	1 1 0
T. F. Hogben, Ash, Canterbury	1 1 0
J. Holroyd, Blackburn	1 1 0
A. Lennox, Crowland, Peterborough	1 0 0
D. Marshall, Lieut. A.V.C.	2 2 0
J. C. Munby, Lewes	1 1 0
G. E. Oxspring, Lieut. A.V.C.	1 1 0
J. E. Porrett, Capt. A.V.C.	1 0 0
H. S. Reynolds, Daventry	1 1 0
T. Runciman, Ely, Cambs.	1 1 0
G. R. Simpson, Great Driffield	1 1 0
T. J. Simpson, Ruthin, Denbighshire	1 1 0
J. Taylor, Edinburgh	1 1 0
J. J. Townsend, Long Stanton, Cambs	1 1 0
Amount previously acknowledged	98 13 0

£118 10 0

Peter Gillard Bond (conditionally) 5 0 0

Gentlemen,—I agree with the suggestions made by your correspondent "Anonymous," in to-day's issue of *The Record*. We must wake up to hold our positions; don't let us be "too late."

I enclose the amount to qualify my being admitted one of the nineteen.—yours faithfully,

March 25th.

P. G. BOND.

CORRESPONDENCE.

NEW MOTOR CAR TAXES.

Sir,—I drive a 20 h.p. two-seater motor car, for which the new tax will be £18 18s. per annum. I am a local Inspector for the Board of Agriculture, and their allowance is 4d. per mile for the above car when engaged upon their work, which they require should be done with the greatest dispatch.

With this new burden of taxation upon us and the high cost of petrol surely the Board must know it is impossible to work on such an allowance.

I trust the Royal College of Veterinary Surgeons and the Council of the Association of Veterinary Inspectors, as well as all individual practitioners, will at once take such steps as appear necessary to call the attention of Parliament, during the debate on the Budget, to the disability under which we are labouring, and demand that we shall be placed in a position of equality with the medical profession in regard to the new taxes as well as the rebate of duties on petrol which we now enjoy. I enclose my card but sign myself,

"INSPECTOR."

5th April.

Sir,—As there are many veterinary surgeons who have motor cars, the increased taxation and also the increased price of petrol will make a considerable difference to our incomes. We are compelled to use them in our profession; it would be impossible for many of us to get our work done satisfactorily unless we had this means of getting about. We must try and get a rebate on this taxation, at least similar to medical men. We should combine, and get our representatives in Parliament to work on our behalf.—Yours faithfully,

T. F. HALL, M.R.C.V.S.

The Priory, Saffron Waldron.
5th April.

Live Stock Insurance—A Newcastle Arbitration.

An arbitration affecting the law of live stock insurance as to uncompleted transfer of policy, was recently heard before Mr. F. W. Dendy, Registrar of the Newcastle County Court, as sole arbitrator. It arose out of a dispute as to the liability under a policy of insurance granted by The County Live Stock Insurance Association, Ltd., to Mr. John Turnbull, late of Lilburn Hill, near Wooler, upon (*inter alia*) a Shire mare against death from disease, accident, or foaling.

Mr. Turnbull gave up his farm of Lilburn Hill at May of last year and held a displensing sale. In the advertisement of sale and also in the catalogue of horses it was stated that the foaling risks of the mare (which was believed to be in foal) were covered by insurance, and at the sale the auctioneer mentioned that the policy would be handed over to the purchaser.

Mr. Matthew Gibson, Preston Mains, Chathill, bought the mare at the sale, and immediately afterwards Mr. Turnbull's agent handed the policy to Mr. Gibson, who thereupon handed it to Mr. Whittle, the agent of the Insurance Association (who happened to be at the sale), with written instructions to have it transferred to the names of "Matthew Gibson & Son." Mr. Gibson paid the price of the mare to the auctioneer. The sale being on a Saturday, Mr. Gibson made arrangements that the mare should remain at Lilburn Hill until the Monday morning. On the Monday morning, before being sent off, the mare was taken ill, and died on the Tuesday. She proved not to have been in foal. Under the circumstances the Insurance Association claimed that they were not liable under the policy. The case was taken up by the Berwick and Borders Farmers' Association, and was heard at Newcastle on the 7th Jan. last. Mr. Meynell, instructed by Messrs. Wade & Robertson, of Alnwick, Newcastle, appeared on behalf of Mr. Turnbull and Mr. Gibson, and Mr. Norman Crombie, of Messrs. George Crombie & Sons, of York, appeared on behalf of the County Live Stock Insurance Association.

Mr. Meynell contended that the policy of insurance having been included in the contract of purchase, and having been handed over by the seller to the purchaser, Mr. Turnbull, the seller, as trustee for Mr. Gibson, the purchaser, was entitled to recover under the policy, or that, as such trustee, he was entitled to recover with the concurrence of Mr. Gibson as sole beneficiary.

Mr. Crombie for the Insurance Association contended that Mr. Turnbull could not recover as the policy was one of indemnity, and he having sold the mare and been paid for it, had suffered no loss, and that Mr. Gibson could not recover as the policy had not been transferred to him. He also contended that the policy following on the proposal was void because it was based on a material misrepresentation of fact as to the age of the mare, and in support pointed out that whilst in the proposal and policy the age was stated to be nine (which would make the age ten at the time of the sale) the catalogue gave the age as eleven.

The arbiter in his award has found that it was intended by the parties to the contract of sale and purchase of the said mare that the benefit of the policy should be included therewith. In dealing with the question of misrepresentation of fact, he states that no oral evidence or other proof of misrepresentation (other than the statement of age in the proposal—policy and catalogue) was advanced before him on behalf of the Insurance Association, and on the other hand the oral evidence given on behalf of Mr. Turnbull and Mr. Gibson showed that the said mare's age was ten, which was the age mentioned in the policy, and he found as a fact that there was no material misrepresentation by Mr. Turnbull at the time the policy was issued.

Dealing with the question of law, he found in favour of the contention of Mr. Meynell on behalf of Mr. Turnbull and Mr. Gibson, and against the contention of the County Live Stock Association, Ltd., and he directed the Association to pay to Mr. Turnbull and Mr. Gibson the sum of £60 (the amount for which the mare was insured) to be applied by them as between themselves in accordance with the rights and equities affecting the same.

OBSERVATIONS ON THE ETIOLOGY OF SARCOMA IN THE RAT, by ALBERT S. LEYTON, M.D., Cantab., Professor of Pathology, University of Leeds, and HELEN G. LEYTON, M.D., Birm. (From the Department of Pathology of the University of Leeds.)

Some previous work on the hæmolytic properties of the serum of rats inoculated with sarcoma showed us that these properties were to be found also in diseases of bacterial origin, and thus suggested an investigation into the possibility of a bacterial origin for sarcoma.

Adopting the hypothesis mentioned, we argued that the site of infection would probably be the cell nucleus, since most of the characteristics of malignant growth point to irritation of the nucleus. It appeared probable that the organism in question would be of very small size if it were to reach and penetrate the nucleus. Based on these two points, a series of experiments was carried out as follows:—

Rat sarcoma, after an immersion for 20 seconds in boiling water, was finely minced with the object of breaking up some of the nuclei, and the minced tumour made into an emulsion with saline solution. The emulsion was filtered through a Chamberland filter (B or F). The filtrate was plated out in the ordinary way on glucose glycerine agar and a streptothrix isolated in several cases. In similar fashion we have also isolated but not yet investigated a streptothrix from mouse carcinoma.

It seemed unlikely that a streptothrix, as such, would be a filter passer, but as they form spores it was conceivable that passage through the filter had taken place in this condition. As a spore, too, it might more easily enter the cell nucleus and also reproduce the streptothrix, either directly or through an alternate generation. If this supposition were correct, the virus of the new growth should be found in the filtrate, and a corroboration of this hypothesis was obtained when, in the summer of last year, three rats, which had been repeatedly injected in the axilla with 1 c.c. each of sarcoma filtrate, developed tumours at the site of inoculation. It is, of course, well known that several sarcomata have a filterable virus, but we are not aware that it has been mentioned in connexion with the Ehrlich rat sarcoma. The first tumour noticed was of much slower growth than the original strain, but when inoculated into 18 rats it grew in four of them just like the original spindle-cell sarcoma, which it then resembled in all respects except in the number of "takes," which at that time was about 90 per cent.

In order to test the relationship of the streptothrix to the formation of sarcoma, it was injected several times into the subcutaneous tissue and into the peritoneal cavity of rats, and several were also fed with it weekly for some time. So far, the tumor has resulted in one of the fed rats only. In the mediastinum was a growth about the size of a cherry, together with several smaller ones. It has all the characters of a spindle-cell sarcoma and is inoculable. From it the streptothrix has again been isolated.

The streptothrix in question appears to be either very pleomorphic or several species are to be found in rat sarcoma. We have also isolated one by the same method from the washings of the hair of a sarcomatous rat, but not, so far, from that of a normal rat. Having

regard to the precautions of technique, etc., against the possibility of error, we feel constrained to abandon the scepticism with which we approached the inquiry and to record the results so far attained. The paucity of positive results we look upon as corroborative rather than otherwise, since obviously all rats will not possess the intrinsic factor as well as the extrinsic (streptothrix) necessary for the formation of new growth.

In connexion with this "nuclear" hypothesis, we may mention that by the use of certain substances having direct nuclear affinity, which were kindly given to us by Prof. A. G. Green, of the Tinctorial Chemistry Department of the University of Leeds, it is possible to compass the destruction and effect the cure of subcutaneous inoculated rat sarcoma. The tumour shrivels up into a hard mass and in time separates as a scab.—*The Lancet*.

Breeders and the Tuberculin Test.

The following remarks occur in a comment on the action of the Argentine exporters, which appears in *The Scottish Farmer* of April 1st:—

"The Tuberculin Test has been demonstrated in many lands to be as reliable as anything human can be, when it is honestly and efficiently applied. The breeders of Shorthorn cattle are not the only wise people in the cattle-breeding world. In many parts of the globe the tuberculin test has been the instrument whereby tuberculosis has been controlled, and finally eradicated. It is admitted that even the extremely partial adoption of Bang's system, which consists of separating the calf at birth from its dam, has resulted in a much higher percentage of bull calves

being sound than used to be the case. There is no mystery about this. Nocard long ago gave evidence and facts to prove that it was so. Observant men have seen facts in families of men and women which told the same tale. Yet for nearly twenty years the leading breeders of Great Britain and Ireland have hugged the delusion that the tuberculin test is unreliable; that Bang's system, or its modification, is of no use; that, in fact, the white scourge which has wrought such havoc in the human family may be treated with indifference in the bovine race. Such folly comes home to roost. The Argentine exporters are the best buyers of British cattle. It is the high prices which they are prepared to give which maintain averages at their high level. As they pay the piper, they have resolved to call the tune."

Inoculation for Epizootic Abortion in Devon.

At Totnes Mr. F. V. Dutton, the Devon County Agricultural Organizer, told the Wrangaton and Totnes Branch of the Devon Farmers' Union that the County Council had recently taken up the treatment of epizootic abortion by the new method of inoculation, and on the previous day 17 South Devon cows were treated with the bacillus. The vaccine would be supplied free to the farmers, but they would have to pay the veterinary surgeon's fee. It had been tried on a large scale in Cornwall and Oxfordshire, and with most of the animals treated the anti-abortion vaccine had been a success. They must not treat any animal in calf with it, and they should not be sent to the bull for two months after inoculation. It has been so successful as to warrant the Board of Agriculture in recommending it to the Devon County Council.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended April 1	13	15			1	1	52	101	4	86	235
Corresponding week in											
{ 1915 ...	12	19			2	3	†68	†143	2	57	222
{ 1914 ...	22	23			2	2	38	52	4	74	853
{ 1913 ...	11	11			3	29	63	122	3	38	541
Total for 14 weeks, 1916 ...	181	208	1	24	20	61	1063	2608	153	1164	3611
Corresponding period in											
{ 1915 ...	220	247			9	14	† 68	†143	136	1004	4190
{ 1914 ...	265	284	11	74	28	72	983	1816	138	855	8131
{ 1913 ...	185	202			49	165	1079	2270	108	505	6360

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, April 4, 1916

† Counties affected, animals attacked:—Hertford 1.

Excluding outbreaks in army horses.

IRELAND.	Week ended April 1	...	...	...	...	...	Outbreaks	4	12	18	97
Corresponding Week in											
{ 1915 ...	...	...	...	...	...	...	...	5	4	23	
{ 1914 ...	...	...	10	96	...	...	5	8	10	15	
{ 1913 ...	...	...	...	...	...	...	2	10	2	26	
Total for 14 weeks, 1916	...	1	5	...	...	...	26	184	77	391	
Corresponding period in											
{ 1915 ...	...	1	1	...	...	...	13	180	69	430	
{ 1914 ...	...	...	52	804	...	...	34	296	71	332	
{ 1913 ...	...	...	...	...	...	...	75	220	40	232	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, April 3, 1916.
NOTE.—The figures for the Current Year are approximate only. * As diseased or Exposed to Infection

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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THE COUNCIL MEETING.

Last week's Council meeting was long and important.

A step which accords with the wish of many members was the decision to issue an appeal for voluntary subscriptions along with the Annual Report. This is good news—but the Council have thought it necessary to adopt the objectionable "retrenchments" foreshadowed in January. It is claimed that they have done so to make the position this year as safe as possible, for it is clear that some Councilmen are not optimistic regarding the results to be expected from voluntary subscription. At the same time it is also clear that these economies are disliked in the Council Chamber, are only regarded as temporary, and would be quickly dropped in the event of voluntary subscription proving an adequate substitute. The moral is plain—if the profession acts up to its motto, the retrenchments will soon be recognised as avoidable. Twelve months was mentioned as a possible term of their existence; and it will be our own fault if they are allowed to endure longer.

With the financial statement, the Treasurer was able to bring a pleasant variant, in the announcement—"I am not asking to sell out Stock: we have enough in hand to carry on to the end of the financial year." This result is, of course, partly owing to the £121 in annual subscriptions, mostly in single guineas, forwarded by members: which sum is increased this week to £133 4s. It may be noted here that not one of these subscriptions, up to the date of the Council meeting, has come from an opposer of the Bill.

Mr. Mulvey then took a new departure. He produced figures showing not only economies which, though none of them in large amounts, and not in any way impairing efficiency, had resulted in a saving of £1129 in the last eight years. These figures are interesting. For the three years 1905-6-7, the expenditure, apart from such standing charges as Examinations, Pension, and Investments, totalled £3780 10 9: average £1260 3 7. For the eight years 1908-15, the total was £9176 3 9: average £1147 0 5, showing a saving per annum £113 3 2. Add to this average, increased sale of Register £28, we get an administrative saving £141 3 2, and an aggregate for the eight years £1129 5 4.

For years past there has been a tendency amongst some of the members to imagine that the Council is an inert body—that its work in no wise benefits the profession. This opinion, as might be anticipated, is more prevalent amongst those who them-

selves contribute nothing to the welfare and advancement of the profession. Recently this phase of feeling has been less noticeable, and many of the later subscriptions have come from members who appreciate the action of the President in taking up the question of the supply of petrol with the Ministry of Munitions.

Again, the recently obtained rebate of 3d. in the gallon on motor spirit was directly due to the pressure brought to bear on the Chancellor, and the representations made to him by the College. Even if there are only 450 motor users in the profession with an average consumption of 500 gallons petrol per annum, the rebate means that between £2800 and £3000 has been saved to the profession.

Now, under the Veterinary Surgeons Act Amendment Bill, the total revenue produced by a guinea a year will not amount to much more than £2000, when allowance is made for the different classes of members exempted by the Bill. So that on this one item the amount saved to the profession by the College is considerably larger than that asked from the profession to maintain it.

Another instance in which the profession have reaped a pecuniary benefit as a result of the action of the Council—Representations were made and pressure was brought to bear on the War Office which secured for Temp. Lieutenants in the A.V.C. promotion to Captain after twelve months' mobilised service. Similar efforts were successful in obtaining the same promotion for Territorial and Special Reserve Officers. It cannot be denied that the action of the Council was very largely helpful in bringing this result to pass. What is the advantage accruing therefrom? There must be at least 350 officers involved, and the additional pay and allowances will amount to at least £80 to £100 a year. In round figures £35,000 per annum has fallen to the share of that part of the profession which is on active service.

If the profession once grasps the significance of these facts, it must surely see also the advantage and the necessity for adequately financing the College.

At the same time the profession is almost unanimous on the point that the only way for the College justly to obtain the support which it needs, and which it is obviously entitled to, is by a fixed annual sum payable by all of its practising members.

There are a number of points of minor interest in the report, some of which illustrate the effect of the war upon us, we shall refer to some of these next week.

PRIMARY TUBERCULOSIS OF THE VULVA AND VAGINA IN CATTLE.

This tuberculous localisation is as rare in animals as it is in human beings. When it exists, it is generally accompanied by concomitant lesions of the uterus, intestines, peritoneum, etc.

Veterinary literature only contains three cases of primary tuberculosis of the vulva and vagina (Hess, Joest). Meyer described a new case which he had seen shortly before (*Zeitscher. für Fleisch-und Milchhygiene*, 1912). The subject was a cross-bred Simmenthal cow, five years old and in a good state of nutrition, which was slaughtered for human food.

Post-mortem Lesions. The vulva presented a very pronounced protuberance the size of a cocoa-nut. Both lips of the vulva were considerably tumefied, and beset with hard nodules ranging from the size of a pea to that of a nut. The sectioned surface showed numerous yellowish nodules with caseous centres; these became augmented in volume in the deeper parts of the tissues, where they enclosed a thick yellow pus. All these nodules were encased by a lardaceous whitish tissue. The vaginal mucous membrane presented no lesions, except one ulceration about 2.4 inches long by 0.6 inch broad, which was beset by small yellowish nodules, and was situated in front of the urinary meatus.

There was nothing abnormal in the uterus and the other organs, except one small gland, caseous internally, in the posterior mediastinum.

Microscopical examination. The epithelial envelope was continuous, but was thickened at certain points. It covered a tissue rich in cells, and traversed by bands of connective tissue well supplied with vessels. Numerous typical tubercles, with giant cells, round cells, and necrotic centres, were found.

Bacteriological examination. No bacilli could be found by microscopical examination. Material obtained by scraping the sectioned surface of the lips of the vulva was diluted with sterile water and injected subcutaneously into two rabbits, which were destroyed about seven weeks later. Both showed typical tuberculous lesions, more or less generalised, in which numerous bacilli were found by the microscope. Two days before destruction the rabbits were subjected to the intradermal tuberculin test, practised upon the ear, and both gave absolutely typical reactions. It may be noted that both rabbits increased in weight after the inoculation, despite the progress of the infection.

The flesh of the cow was passed for consumption, the genital organs and the lungs alone being condemned.—(*La Clinica Veterinaria*).

CYSTIC OVARY IN A MARE.

Joaquin Ravetllat records this case. A mare showed colicky pains and a rise of temperature, with normal defæcation. Anodynes were administered. The next day the same condition continued, but defæcation was not observed. Rectal explora-

tion demonstrated the presence of an abnormal body of extraordinary volume in the anterior part of the pelvis. This was believed to be due to an accumulation of faeces in the pelvic curvature of the colon.

A purgative was administered, but the mare died the next day. Post-mortem examination revealed that the right ovary presented a tumour of extraordinary dimensions, the weight of which was estimated at thirty pounds. The tumour, which was soft in consistence, presented a great number of vesicles of the size of a hazel-nut or less, filled with serosity. No microscopical examination was made; but the author believes that the tumour was a *cistoma multilocular*. The left ovary was normal. The abdominal cavity contained some litres of a reddish serosity. There was considerable inflammation of the epiploon, and some red spots upon the visceral layer of the peritoneum and the serous tunic of the intestines. Death had certainly been caused by peritonitis. The mare had been in season about two months. The owner had noticed an enlargement of the belly which appeared to him abnormal, and also that the mare became fatigued more than ordinarily when at work.—(*Revista de Higiene y Sanidad Veterinaria*).

THE TREATMENT OF RUPTURED PERINEUM IN MARES.

The following is an outline of the method practised by Prof. Schmidt, of the Vienna Veterinary High School, in cases of ruptured perineum in mares, including old-standing cases. First an incision is made on each side of the perineal rupture, running almost parallel to its course. These incisions begin laterally from the anus, extend below the region of the dorsal commissure of the vulva, and are carried to about the junction of the hairless and haired skin. A shorter incision is then carried from the dorsal end of each of the first incisions, directed median-wards and transversely. In consequence of retraction of the wound-edges, a wound surface now appears which has somewhat the shape of a right-angled triangle, with the hypotenuse directed laterally.

The edges of the perineal rupture are then "freshened" so as to secure surfaces suitable for union; and the rupture is sutured. By this method even old granulated ruptures of the perineum can be successfully healed.—(*Berliner Tier. Woch.*)

W. R. C.

(This operation is on well-known lines, though I am not aware that its principle has ever before been applied to rupture of the perineum in mares. The above is a brief and rather fragmentary abstract of an article which appeared in another journal (*Zeitschr. für Tiermedizin*), and which was illustrated by figures. It would certainly be advantageous to have a more exact description of the lines of incision than is given above.—*Transl.*)

Gamekeeper (to sportsman who has missed at every shot)—"If them rabbits was a yard or so longer, sir, you'd make a fine bag!"

Royal College of Veterinary Surgeons.

QUARTERLY MEETING OF COUNCIL.

A Quarterly Meeting of Council was held at the College, 10 Red Lion Square, London, W.C., on Friday, 7th April, Mr. F. W. GARNETT, J.P., President, occupying the Chair.

The following were present: Messrs. Banham, Barrett; Prof. Bradley; Messrs. Carter, Clarkson, Coleman; Sir John M'Fadyean; Messrs. Lawson, McL. McCall, McKinna; Prof. Mettam; Messrs. Mulvey, Price; Major-Gen. R. Pringle, C.B., D.S.O.; Prof. Shave; Mr. Slocock; Sir Stewart Stockman; Messrs. Sumner, Trigger; Mr. G. Thatcher, Solicitor; and Mr. Fred Bullock, Secretary.

MINUTES.

The minutes of the last meeting, which had been printed and circulated, were taken as read, and confirmed.

APOLOGIES FOR ABSENCE.

The SECRETARY announced that letters regretting their inability to attend the meeting had been received from Messrs. Shipley, Share-Jones, Dunstan, Wharam, Howard, Packman, Major-Gen. Thomson and Major Brittlebank.

OBITUARY.

The SECRETARY read the Obituary List.

PRESENTATION OF STEEL MEMORIAL MEDAL TO PROF. JAMES MACQUEEN, F.R.C.V.S.

The PRESIDENT, addressing Prof. Macqueen, who was received with hearty cheering on entering the Council chamber, said: I have very great pleasure in presenting you with the John Henry Steel Memorial Medal. There are in the veterinary profession very few honours which we can confer on our most distinguished members, and I venture to say that this medal has never been conferred on a more worthy member of the profession than yourself. (Hear, hear). Your work in the past has been well-known throughout the profession for its thoroughness from beginning to end. I have special pleasure in presenting this medal to you because you were one of my own teachers, and I know thoroughly the sterling worth of the work you have done. In presenting the medal, I can only say that I hope you will live long to enjoy the possession of it. (Cheers).

[The PRESIDENT then presented the medal to Prof. Macqueen.]

Prof. MACQUEEN, in reply, said: Mr. President and Gentlemen,—I thank you very sincerely for this mark of appreciation of my services. I look upon this as a token of distinction which I shall prize very highly for the remainder of my life. I would also like to thank you, Mr. President, for the very kind terms in which you conferred this honour upon me. (Cheers).

PRESENTATION TO THE SECRETARY.

The PRESIDENT: Gentlemen, I have now another presentation to make. As you are all aware, our worthy Secretary is about to take a step, in a very few days, upon which we entirely congratulate him (Hear, hear), and on behalf of the Council I ask him to accept this cheque with all our heartfelt wishes for his future prosperity in the happy life which we hope is in store for him. (Cheers).

[The PRESIDENT then presented a cheque to Mr. Bullock.]

The SECRETARY, who was received with cheers, said: Mr. President and Gentlemen—Luckily for me, the President gave me a little hint that something

of this sort might happen, otherwise, I do not know what would have occurred if I had been taken unawares. I wish, on behalf of my future wife and myself, to thank you very heartily indeed for this token of your interest in my welfare, especially the President, for having initiated the idea, and for the very kind way in which he expressed your wishes in making the presentation. I can assure you that we shall purchase some useful article for our home which will enshrine for me happy memories of the gift you have made and the kind feelings you entertain towards me. I hope I shall spend many happy years in your service (hear, hear), and help to do my bit in my sphere to forward the work of the Royal College of Veterinary Surgeons. (Cheers).

CONGRATULATIONS TO MR. ABSON.

The PRESIDENT: I have another very pleasing duty to perform, and that is to propose that the Council conveys its heartiest congratulations to one of its members, Mr. Abson, on the receipt of the Distinguished Service Order. (Cheers). I feel sure that these few words will meet with your approval, because it is a very high honour in the military world, and it reflects credit upon the whole profession. (Cheers).

The resolution was carried by acclamation.

CORRESPONDENCE.

The SECRETARY read the following letter from Mrs. McCall:—

"4 Wilton Crescent, Glasgow,
14th January, 1916.

Dear Sir,—Will you convey to the members of Council of the Royal College of Veterinary Surgeons our sincerest thanks for the kind expressions of sympathy for us in our recent sad bereavement, and for their deeply-felt appreciation of my husband's presence when these quarterly meetings of Council were held.

At a time like the present, when death is near, if not in the midst of most homes in the land, it is a matter of sincere gratitude for me to reflect on the long life of crowded usefulness which has now, alas! come to an end. It is from the memory of such a life we must gather comfort and consolation.

Thanking the members of Council again for their sincere and much-felt sympathy.

Believe me, gratefully yours,

C. S. J. MCCALL."

FINANCE COMMITTEE.

Mr. LAWSON read the following report of a meeting of the Finance Committee held on Friday, April 7th:—

Donations. The SECRETARY reported that up to date the sum of £121 13s. has been received as donations to the funds of the College.

It was resolved to recommend:

That with the annual report an appeal be issued to the profession, pointing out the general financial situation of the College and the amount of the deficit on the year's working, and asking for voluntary subscriptions of a guinea a year until such time as the Bill now before Parliament is passed into law.

That the matter be left in the hands of the Publication Committee with power to act.

Financial Statement. The TREASURER submitted his quarterly financial statement, showing a balance in hand of £509 17s. 3d., including the proceeds of War Stock, £483 14s. Liabilities were shown amounting to £60 14s. 5d.

It was resolved: That the financial statement be approved, and that the Treasurer be ordered to pay the liabilities shown, together with cheques for monthly salaries, petty cash, printing of *Register*, Fellowship Examiners' fees, Special Examination fees and examination fees and expenses, gas, electric light, workmen's insurance.

Mr. TRIGGER: I move the adoption of the report.

Dr. BRADLEY: I second the motion.

Mr. MULVEY: For the first time for several meetings I am not asking to sell out any Stock; we have enough money in hand to carry on to the end of the financial year.

I think, Sir, it would not be out of place if I drew the attention of the Council to the savings that we have been able to make in the last few years compared with the three previous years from 1905 to 1907. From 1905 to 1907 our average establishment expenses were £1,260 3s. 2d. per annum; from 1908 to 1915 the average was £1147, so that we have saved each year £113 3s. 2d. In addition to that we have had an increased income of £28 per annum from the sale of *Registers*, which brought up our total administrative savings to £141 3s. 2d per annum, or an aggregate saving in the eight years of £1129 5s. 4d. These savings are in a great measure due to the very efficient work carried on by our Secretary (hear, hear), and I particularly wish to emphasise that because of the good work that he has done and is still doing. I do not know that there is very much more I wish to say except that we still want money, and are likely to, and I am hopeful that the suggestion the Finance Committee has made in its report—that an appeal be issued to the profession—will be carried. The Council has done a considerable amount of work for its members for many years past. It was due to the Council in the first place, that the members of the profession who are in the Army obtained substantive rank; they made representations to the Army Council, and that was granted to them. Then again, lately our men in the Army have been granted promotion to the rank of Captain at the end of twelve months service, which carries with it a considerable addition to their pay, amounting to from £80 to £100 a year. Taking the number of our members engaged in the service that means an increase amounting to almost £30,000 a year. Then again, in regard to the petrol tax, there has been a saving to the members of the profession who own motors amounting to to from £2000 to £2500 a year. I am simply mentioning these facts to show that the Council deserves some consideration, that they carry out the work they are appointed to do, and that they are not all drones. The Council, as a Council, have curtailed the expenses of the College to the very lowest limit, and at the same time they are doing everything that is possible to promote the best interests of the profession.

Mr. PRICE: Do I understand that we are going to appeal to the profession for funds?

The PRESIDENT: If this Report is adopted, yes.

The motion for the adoption of the report was then put, and carried unanimously.

EXAMINATION COMMITTEE.

Mr. MULVEY read the following report of a meeting of the Examination Committee held on Thursday, April 6th, 1916:—

Correspondence. A letter was received from a veterinary student who passed in Class C in December, 1915, asking permission to sit at the Class D Examination in July next.

The Secretary was instructed to reply that the application cannot be acceded to.

A letter was received from a rejected student in Class B, asking permission to sit at the next Examination without further attendance at lectures.

The Secretary was instructed to reply that the application cannot be acceded to.

Educational Certificates. Educational Certificates numbered 1600 to 1604 were submitted, and with the exception of 1603, were approved.

Special Examination. The Secretary reported that seven students had entered for the Special Examination,

namely four from London and three from Dublin.

It was resolved: That the Examination be held in London on Wednesday and Thursday, May 3rd and 4th.

Examination Sub-Committee.

The following report of the meeting of the Examination Sub-Committee, held this day, was received and adopted:—

Appointment of Chairman. It was resolved that Prof. Mettam be appointed Chairman of this Sub-Committee.

Preliminary Educational Examination. A letter (25/11/15) was submitted from the Principal of the Swindon and North Wilts Secondary School, making the suggestion that only one foreign language should be required in the Preliminary Educational Examination.

It was resolved to recommend: That no alteration be made in the regulations governing the Preliminary Examination.

Rhodes University College. Correspondence was submitted from the Registrar of the Rhodes University College, Grahamstown, Cape of Good Hope, asking whether undergraduates who attended courses in Chemistry, Zoology, and Botany would be excused the first year's work in those subjects, and if they passed the 1st B.Sc. Agriculture Examination, would be also exempted from the first professional examination.

It was resolved to recommend: That the Registrar be informed that the Bye-laws do not provide for the exemptions referred to.

Cambridge Senior Examination. A Memorandum of the revised Regulations of the Senior Examination was submitted, and it was resolved to recommend:—That the Senior Examination of the University of Cambridge be recognised, provided that the student has at not more than two Examinations attained the standard of recognition in the required subjects.

Fellowship Theses. It was resolved that the following be appointed a special Committee provided for under paragraph IV. of the revised Regulations for the Fellowship Degree:—The President, the Chairman of the Examination Committee, Sir Stewart Stockman.

On the motion of Mr. MULVEY, seconded by Mr. McKINNA, the report was adopted.

REGISTRATION COMMITTEE.

The Secretary read a report of the meeting of the Registration Committee held on Thursday, April 6th, 1916, which stated that a letter was received from a member of Council, calling attention to the reports of two cases of applications made to Local Tribunals by unqualified practitioners for exemption from military service.

The Secretary was instructed to make further inquiries, and to report to the next meeting of the Committee.

Other correspondence was submitted, and the Secretary was instructed as to the replies to be sent.

Cases.

The first hearing of the case of B. M. Gunn, member, took place at the Committee Meeting on 6th January last. The accused did not appear personally, but was represented by his solicitor, Mr. Gavin Duffy, who produced a medical certificate of the indisposition of his client.

The charge was for conduct disgraceful in a professional respect in that the accused was convicted of drunkenness by a court martial, and in consequence dismissed the service. A certified copy of the finding and sentence of the court martial to that effect was put in.

The accused's Solicitor made the following objections to the case being dealt with:—

1. The accused could not be punished twice for the same offence (Interpretation Act 1889, Sec. 33).

2. The offence did not come within the meaning of the words "conduct disgraceful in a professional respect."

3. The certified copy of the conviction was not admissible in evidence before the Committee (Army Act, Secs. 163, 164, and 165; *Royal Aquarium v. Parkinson* 1892, 2 Q.B. 447).

4. No jurisdiction in this Court or in a Civil Court to try him for this offence, he being a military man.

5. That the College bye-laws had defined "conduct disgraceful in a professional respect," and this offence was not included.

The Committee considered all these objections and over-ruled them.

Mr. GAVIN DUFFY then asked for an adjournment for the attendance of his client which the Committee granted.

The hearing of the case was resumed to-day. Mr. Gavin Duffy attended and apologised for the absence of his client, which he could not account for.

He took the point that the College Solicitor was the prosecutor, and ought therefore not to remain and consult with the Committee. The College Solicitor repudiated this, and said he acted as legal adviser to the Committee.

Mr. GAVIN DUFFY contended there was no evidence of what the offence really was, and that mere drunkenness did not amount to disgraceful conduct in a professional respect. He produced no evidence.

After careful consideration the Committee are satisfied.

That the accused was guilty of drunkenness when on active service.

That he was found guilty of that offence on trial by court martial and sentenced to be dismissed from His Majesty's service, which sentence was afterwards confirmed by His Majesty the King.

The Committee reported that in two cases undertakings had been received, and that in the case of C. Aspinall, a non-member using title, a prosecution had been instituted, and a conviction obtained with a fine of ten shillings and costs.

The Committee reported that in five cases they regretted they had no power to take action; another was deferred for further investigation, and in a further case it was resolved that a prosecution be instituted.

Applications for Restoration.

Applications were received from Mr. Robert Aitkenhead and Mr. John Alexander Cunningham, whose names had been removed from the Register under the operation of Section 5, Sub-section (4) of the Act, for the restoration of their names to the Register.

The applications were found to be in order, and it resolved was to recommend: That the names of Mr. Robert Aitkenhead and Mr. John Alexander Cunningham be restored to the Register of the Veterinary Surgeons.

The PRESIDENT: I propose the reception and adoption of the report, with the exception of that part relating to the case of Mr. B. M. Gunn, and the applications for restoration. There is not the required quorum present to deal with those matters; I will bring them forward later on should the required quorum be present.

Mr. BANHAM seconded the motion, which was carried unanimously.

On the motion of Mr. TRIGGER, seconded by Mr. CARTER, authority was given for the seal of the College to be affixed to the order for prosecution mentioned in the report.

PARLIAMENTARY AND GENERAL PURPOSES COMMITTEE.

Dr. BRADLEY read the following report of a meeting of the Parliamentary and General Purposes Committee held on Thursday, April 6th:—

Motor Licences. Letters were received from members suggesting that an application should be made to the Treasury to grant the same exemptions to veterinary surgeons as were allowed to medical practitioners with regard to the licences on motor cars.

It was resolved: That the matter be left in the hands of the President, with power to act.

Supply of Petrol. The SECRETARY reported that the Ministry of Munitions was preparing a scheme for the better regulation of the supply of motor spirit to motor users, and that the President had obtained from the Ministry of Munitions an assurance that the requirements of the veterinary profession would be carefully kept in view in any arrangements that might be made. It was, however, necessary to obtain complete information with regard to the number of veterinary surgeons using motor cars and the amount of petrol consumed.

It was resolved: That the matter be left in the hands of the President, with power to act.

Fire Prevention. The question of the supply of fire extinguishers was deferred to the next meeting.

Dr. BRADLEY: I move the reception and adoption of the report.

Mr. BANHAM: I second that.

The PRESIDENT: With regard to the motor licenses, I was under the impression that it was left to the Chairman of the Committee (Dr. Bradley) and myself to take action if the medical profession had the concession granted to them under the new Bill.

Mr. McKINNA: It was not stated, but probably it was intended. I shall be glad to propose that we add the name of Dr. Bradley.

The PRESIDENT: I should like someone to share the responsibility. [It was agreed that Dr. Bradley's name should be added to the report.]

The PRESIDENT: With regard to the supply of petrol I should like to say that comparatively few users of motor cars in the profession have hitherto made any return at all. Only about 400 have done so, which I know is nothing like the number of members using motor cars. I should like to warn them that, in the event of their not complying with this request, they may find themselves later on in a very awkward position with regard to the supply of petrol. It is entirely in their own interests that they are asked to make this return, and if they do not take the trouble to do so they must not lay any blame, at any rate, on this Council.

The motion for the adoption of the report, with the addition of Dr. Bradley's name, was then put and carried unanimously.

PUBLICATION, LIBRARY AND MUSEUM COMMITTEE.

Mr. PRICE read the following report of a meeting of the Publication Committee held on April 7th, 1916:—

Presentations to Library. The Secretary reported that since the date of the previous quarterly meeting of Council, the following presentations had been made to the Library:—

Calendar of the Pharmaceutical Society of Great Britain, 1916; The Register of Pharmaceutical Chemists and Chemists and Druggists, 1916; Calendar of the Pharmaceutical Society of Ireland, 1916; Report of the Chief Veterinary Surgeon, Salisbury, Southern Rhodesia, for the years 1912-13-14; Report of the Veterinary Bacteriologist, Salisbury, Southern Rhodesia, for the year 1914; Annual Report of the Veterinary Pathological Laboratory, Nairobi, 1911-12; Poultry for Land Settlement, by F. G. Paynter; The Prevention of the Deafness and Mortality which result from Aural Suppuration, by Charles J. Heath, F.R.C.S.; U.S. Department of Agriculture: Bulletin and Pamphlets; Brief History of the Cattle Tick Fight in Louisiana to date, by W. H. Dalrymple, M.B.C.V.S.; *The Rhodesian Agricultural Journal*, October and December, 1915; *The Journal*

of the Board of Agriculture, January, February, and March, 1916; *Leaflets of the Board of Agriculture and Fisheries*; *Orders of the Board of Agriculture and Fisheries*; *The Bloodstock Breeders' Review*, April, 1916; *Revue de Pathologie Comparée*, December, 1915, January and February, 1916; *The Veterinary Journal, News, and Record* for the quarter; *The British Medical Journal* for the quarter; *The Educational Times* for the quarter; *The World's Carriers* for the quarter.

It was resolved that a vote of thanks be conveyed to the respective donors.

A photograph of D Mobile Veterinary Section of the A.V.C. (T.F.) in Egypt was presented by Messrs. H. & W. Brown, publishers of *The Veterinary Record*.

It was resolved: That the best thanks of the Council be addressed to Messrs. Brown for their gift.

Purchases. The Secretary reported that the following had been purchased:—

Tropical Diseases Bulletin, Vol. 7, Nos. 1, 2, and 3.

Tropical Veterinary Bulletin, Vol. 3, No. 4.; Vol. 4, No. 1.

Register, 1916. The Secretary reported that he had found it would be more economical to bind 450 copies of the Register instead of 400, as instructed at the previous meeting.

And it was resolved: That the action of the Secretary be approved.

On the motion of Mr. PRICE, seconded by Mr. LAWSON, the report was received and adopted.

WAR EMERGENCY COMMITTEE.

The SECRETARY read the following report of a meeting of the War Emergency Committee held on Thursday, 6th April, 1916:—

Correspondence. The Secretary submitted correspondence with the Department of Agriculture and Technical Instruction for Ireland, with regard to the release of officers for service with the Army Veterinary Corps, and it was resolved that no further action be taken.

The Secretary submitted the reply of the War Office, dated January 31st, to the letter addressed to the Army Council by the President in accordance with paragraph iii. (b) of the minutes of the previous meeting.

Correspondence from Mr. J. C. Coleman was submitted and considered, and it was resolved that the matter in question is not one on which the Committee can recommend the Council to take any action.

Territorial Force: Promotions and Pay. The President reported that complaints had been received from several officers of the Territorial Force with regard to the discrepancy between the pay of a Captain in the Territorial Force and that of a temporary Captain in the Army Veterinary Corps, and that he had communicated with the War Office on the matter. He had, however, been informed that the matter had been carefully considered by the Treasury, who had decided that there were no grounds for the complaint.

It was therefore resolved that no further action be taken in the matter.

The PRESIDENT: There is one other matter which should have come before the Committee but which was overlooked. It is this: there are at the present time 39 C and D veterinary students serving with the Forces. I think it would be very desirable that we should get these men back to their classes at the earliest possible date. Of course, it would be necessary to communicate with the War Office on the point. When there is such a very serious shortage of veterinary surgeons every one counts, and we should try our utmost to get these men back. With this addition I propose the reception and adoption of the report.

Mr. CARTER: I second that.

Mr. SUMNER: Would you make it a request?

The PRESIDENT: Yes, that is what I thought—a request that they return to their studies.

Mr. SUMNER: Can it be done without their consent?

The PRESIDENT: Yes. They can be ordered back to their studies. They are under Army Orders. Medical students are being sent back.

The motion for the adoption of the report was then put and carried unanimously.

The PRESIDENT: The facts with regard to the Territorial Force have not been put before me in any shape or form, but as a matter of fact those gentlemen who hold commissions in the Territorial Force receive, besides their pay, a four-month's bonus for their first year's service, and for their second and subsequent year's service they receive a two-month's bonus, which far more than compensates them for any difference between their pay and that of a man holding a temporary commission. Besides that, they have already had, and still have, the advantage of the earlier promotion which we obtained for the temporary officers. There is really no ground, as far as I can see, for any complaint at all on the part of the Territorial Force Captains. (Hear, hear.)

Mr. BARRETT: May I ask by whom the complaint was made?

The PRESIDENT: I do not think it is advisable in the interests of the gentlemen that made the complaint to give that information. I have had at least eight or nine letters from different officers.

Mr. COLEMAN: With regard to the gratuity and the extra pay we receive, I have not worked them out exactly, but I think you will find they do not correspond. The temporary men also receive a gratuity at the end of each year's service—it is automatically given to them, and in addition to that, on promotion to the rank of Captain they are given 1/6 a day more pay than a Territorial Captain who probably has held his commission for some two or three years. He can resign or not as he likes. In my own particular case, my resignation has been accepted, and the War Office informed me that I got no gratuity at all. I have served 20 months, and I took my commission some two years before mobilization. I resigned my commission on grounds that need not be mentioned here, and I got no gratuity at all after serving 20 months.

The PRESIDENT: Mr. Coleman must be perfectly aware that if a man resigns his commission he does not, according to the Regulations, get any gratuity.

Mr. COLEMAN: My point was that the gratuity does not make up for the extra pay and the gratuity that the temporary-commissioned officer receives. I know it is not the same, but I cannot give you the exact amount.

The PRESIDENT: You may take it that what I have stated is the final finding of the Treasury, and I think there is no ground at all for any complaint with regard to the difference of pay. (Hear, hear).

HONOURS AND PRIZES COMMITTEE.

Prof. METTAM read the following report of a meeting of the Honours and Prizes Committee held on Thursday, 6th April:—

Walley Memorial Prize. A letter was received from the Solicitor, expressing the opinion that the Charity Commission might be willing to grant an order varying the terms of the Trust Deed so as to provide for the prize to be awarded under a similar scheme to that for the award of the FitzWygram and the Williams prizes.

It was resolved to recommend: That an application be made to the Charity Commissioners to have the Trust Deed varied in accordance with the report of the Solicitor.

On the motion of Prof. METTAM, seconded by Dr. McI. MCCALL, the report was received and adopted.

RETRENCHMENT SPECIAL COMMITTEE.

The SECRETARY read the following report of a meeting of the Retrenchment Special Committee held on Thursday, 6th April:—

Examination Regulations. It was resolved to recommend: That for the examinations to be held in July next, provision be made to examine students as heretofore (but with one examiner), in Junior Anatomy as part of the Class A Examination, and in Stable Management as part of the Class B Examination.

That at the election of examiners on the 14th inst., the appointments be made for one year only.

The PRESIDENT: I propose the reception and adoption of this report. No doubt it will provoke considerable discussion at a later stage of our meeting, but I do not think there is any necessity to discuss it at the present time.

Mr. TRIGGER: I second that.

Mr. MULVEY: If we adopt this it means, I take it, that it binds the Council to elect only one examiner in each subject?

The PRESIDENT: No, I don't think so. That comes up later.

Mr. SUMNER: Do we continue the usual plan of examination for Junior Anatomy and Stable Management?

The PRESIDENT: Yes, for the July examination. That was to get over any legal difficulty that a student might think he had not had sufficient notice of any alteration; but at the Christmas examination, if the resolutions are passed at the special meeting, there will be no Anatomy examination in A, nor will there be any Stable Management examination in B.

Mr. SUMNER: That, I suppose, is a sufficient difficulty to warrant the change?

The PRESIDENT: Yes. It was to do away with any doubt there might be in a student's mind as to whether he had a legal ground of complaint against this Council or not.

Mr. SUMNER: You mean the conditions pertaining when he entered the College?

The PRESIDENT: Yes. He will now have practically twelve months notice if you pass the subsequent resolutions.

The motion for the adoption of the report was then put, and carried unanimously.

APPOINTMENT OF SCRUTINEERS.

The PRESIDENT: Up to the present there are not more than the required number of nominations for vacancies on the Council, but of course there is plenty of time for additional members to be nominated, and I trust that will be the case, because personally I have a great objection to serving on any body without an election. I suggest that the same gentlemen as last year be elected as Scrutineers, and that I be empowered to fill any vacancies.

Mr. CARTER: I move that. Mr. SUMNER seconded the motion, which was carried unanimously.

ANNUAL DINNER.

The PRESIDENT: The next item on the Agenda is, "To decide as to Annual Dinner." I do not think that needs any consideration. (Hear, hear).

This concluded the business of the Quarterly Meeting of Council.

SPECIAL MEETING OF COUNCIL.

Immediately following the Quarterly Meeting, a Special Meeting of Council was held. The President (Mr. F. W. Garnett, J.P.) occupied the Chair, and the same members were present as at the Quarterly Meeting.

Minutes. The minutes of the last Special Meeting, having been printed and circulated, were taken as read, and confirmed.

Motion by Mr. Mulvey. Mr. MULVEY: I beg to move the first resolution on the agenda for the special meeting, namely, "That Section (a) of Bye-law 81 be altered to read as follows: (a) Anatomy. A course of not less than 50 lectures and 20 hours practical instruction on the Anatomy of the Domesticated Animals."

Sir JOHN M'FADYEAN: Mr. President, might I suggest that, with Mr. Mulvey's consent, you should allow me to move the motion of which I have given notice: "Bye-law 78: To be suspended," because I am sure you will agree that it is by far the most important of the alterations suggested, and that the other suggested alterations depend partly upon it. Bye-law 78 at present reads, "There shall not be less than two examiners to each subject," and my motion is that that be suspended.

Mr. MULVEY: I have no objection at all to that course being pursued.

The PRESIDENT: I think it would be as well to take the general principle first, and then the others might perhaps follow upon what is decided in regard to this one.

Motion by Sir John M'Fadyean. Sir John M'Fadyean: Then, Sir, with the consent of the Council, I move: "That Bye-law 78 be suspended." Bye-law 78 is: "There shall not be less than two examiners to each subject." I venture to think it is not necessary to make a long speech in proposing the motion, because the facts bearing upon the question are very well known to all the members of the Council, and have, I think, already been pretty fully discussed. This, it will be remembered, was the principal recommendation made by the Special Committee or Sub-Committee which was appointed to consider what steps might be taken to make the income and expenditure of the College balance, and, after the most anxious consideration, they were unable to see that there were any other means by which anything like an adequate sum could be saved to the College than by the reduction in the number of examiners for each subject from two to one. So far as I know, no one has suggested any other method. Mr. Mulvey has given notice of certain alterations to Bye-laws, and I myself have also given other notices of motion which, if carried, would effect what might be called trivial economies. Altogether I suppose they would reduce the College expenditure by perhaps £50. But, as is well-known, our deficit in recent years has been immensely greater than that, and I understand it is not likely to be less than £500 during the financial year that has just ended; and, having regard to the fact that the number of students will certainly be much smaller during the year which has now begun, we must anticipate, unless there is some very notable increase in our income, a still greater deficit during this current year. I do not admit that the decision that an appeal is to be made to the profession to promise annual subscriptions to the funds of the College affords any reason for delay in this matter. In the first place, I think it is very very doubtful whether any such sum as £500 will be obtained in that way, and even if one had anything like an assurance that such a sum would be obtained, I think it would still be wise for the Council in the meantime to try to make its income and expenditure balance during the present year. Hardly anybody will deny that the work of this College is going to be seriously hampered, even if the income were increased to such an extent as would balance last year's expenditure. It is very well known to those who are on the Registration Committee that we have had to exercise economies that are undesirable with regard to prosecutions. I mention that as indicating that, even if a considerable sum is obtained by annual subscriptions from members of the profession, we can still find means of spending that to the advantage of the profession. I think, therefore, it will not be seriously contested that

there is every obligation on us to effect whatever economy is necessary in the College expenditure, and that up to the present moment no other plan which promises any material reduction in that expenditure has been put forward. There remains only one other question, and that is whether the course proposed would be one seriously detrimental to the conduct of the examinations. At the Committee Meeting and in the Press I notice it has been asserted that such would be the result. It is apparently taken almost as a matter of course that the standard of examinations will be very seriously deteriorated if we have only one examiner for each subject. Now I maintain that that is not a view which can be held by anyone who is acquainted with the manner in which the examinations are at present conducted. It is perfectly true that we have for each subject two examiners, but I say here publicly—and I should say it in the presence of the examiners if they were here—that in the case of most of the subjects the examination is a one-examiner examination. There are two examiners, but it very rarely happens that both of them examine the candidates simultaneously; it very rarely happens that while one examiner is examining the student orally the other listens. The rule is that the second examiner more or less ostentatiously removes himself while the student is being examined by his colleague, and in some of the very important subjects such as Medicine and Surgery, and, I believe I am right in saying, in Hygiene and Stable Management, the two examiners are not even in the same place; they are as a rule in separate loose boxes. How can anybody advance seriously the contention that if we ask one examiner to conduct the whole of the student's examination in future, with a view to economy, that will be disastrous to the standard of the examination? Finally, I want to emphasise the point that it is not suggested that it is not desirable to have two examiners. We are all agreed that we would much rather have two examiners in the interests of the examiners as well as the students. This is recommended as a purely temporary measure. As soon as our finances permit and the Council think fit, the system of having two examiners can be restored at three months' notice, as I have no doubt it will be. I therefore formally move the suspension of Bye-law 78.

Mr. TRIGGER: As a member of the Committee, I should like to second the resolution which Sir John M'Fadyean has moved. The matter was given very careful consideration. It seems to me that the profession as a rule have adopted the rule of the Council. In letters which have appeared in the Press and in private letters which I have received myself, the opinion is expressed that the Council are doing exactly the right thing. I quite agree with Sir John that this is only a temporary measure. It is not quite a war measure, because our finances were unfortunately heavily involved before the war occurred, but I am not at all sure that we shall ever go back to the old system, because I think the new one will be found to act very efficaciously. I also wish to emphasise what Sir John said: that it is £500 a year we want to save and not a few sovereigns. Unless we can save £500 a year small economies are of very little use.

Mr. CARTER: What saving is it estimated will be effected by reducing the number of examiners?

The PRESIDENT: We reckon something like £500 a year.

Mr. CARTER: At the present time?

The PRESIDENT: Yes.

Mr. McKINNA: Would any invitation be issued to the teachers in the respective subjects to take a part in the examinations?

The PRESIDENT: That is impossible; it is forbidden under the Charter, but provision is being made for the teachers to be present at the examination.

Mr. SUMNER: And also they are to be allowed to make representations.

The PRESIDENT: Representations to the examiner, but not to the students. We cannot do that.

Sir JOHN M'FADYEAN: Might I be allowed to remark that it is not absolutely correct to say that the services of the teachers could not be utilised in connection with the examinations? The services of any teacher could be utilised to examine another teacher's students. I think I am correct in saying that the provision of the Charter is that no teacher shall be allowed to examine his own students.

Mr. McKINNA: I would strongly support that they should, because they are the best judges.

Mr. MULVEY: Desirous as I am of saving all the money that is possible for the use of this Council, I certainly shall not support this motion, even in the interests of the examiners, putting the students and the public on one side altogether. The examiners in my opinion have more security from being found fault with if there are two present than if there is only one, and in the interests of the public I contend that the examination would be more acceptable and more efficient with two examiners than with only one. At the Committee Meeting I was in a minority of one, and have been all along. Still, I am of that opinion, and I shall vote accordingly.

Mr. McKINNA: This, as I understand, is only a temporary expedient in order to save money. We are not going to continue it longer than we can help.

Mr. MULVEY: I think the argument of it being a temporary measure is a bad one.

Mr. McKINNA: I am surprised to hear the Treasurer admit that he is in a minority of one in regard to this particular question, because we know how anxious he is that money should be saved. As I am assured that the efficiency of the examination is in no way interfered with, I shall strongly support this suggestion as a sound measure of economy. It is only a temporary measure, and as the efficiency of the examination is not impaired I shall support it.

Mr. CLARKSON: I take it that the examiners are elected for only one year?

The PRESIDENT: That is so.

Mr. CLARKSON: So that so far as that is concerned it is only a temporary measure?

The PRESIDENT: Yes.

Mr. CLARKSON: I mention that because Mr. Trigger added a note which rather upset that idea. I think it was a very unfortunate remark. Sir John M'Fadyean assured us that this is only a temporary measure, but Mr. Trigger said it might act so well that we should keep it on.

Mr. TRIGGER: Only if it acts well.

Mr. SUMNER: I do not think any of us can suggest that a single examiner will be as efficient as two examiners. We all very much regret that our method of examination has not been better devised, so that the student might be examined in the presence of both examiners. We all know perfectly well that the point raised by Sir John M'Fadyean is a very patent one. Up to the present the two examiners have operated in two different places. That I take it was never the wish of the Council, and it is a state of affairs that the Council, might in the future endeavour to remedy. A great deal of that kind of thing has been done with the idea of speeding up the examinations and getting through the different centres in a given time. It is certainly not desirable if good results are to be obtained. I do not think any of us who think seriously about this question can for one moment suppose that our examinations will be as efficiently conducted or bear the same *imprimatur* to the public when conducted with one examiner as with two. If it was in any way possible to preserve our dual examinership I should be inclined to vote for it

very strongly, but I have been given to understand by our President that the whole matter has been gone into, and that this is absolutely the only means whereby we can continue to exist. (Hear, hear). Professionally, that is a serious admission to make; educationally, I think it is more serious still. The time seems to be coming when the College is acknowledging that she has ceased to be the power that she has been in the years that have gone by. I look upon this step with considerable feelings of—I cannot say misgivings, but I do think it is a step that is certainly somewhat retrograde, and it is a sorrow to me that it seems to be the only possible chance of the Royal College of Veterinary Surgeons continuing to exist.

The PRESIDENT: Gentlemen, as you all know perfectly well, a Special Committee was formed with instructions to see if some retrenchment could not be made in the method of carrying on the affairs of the College. It was patent to all that the only subject on which any more retrenchment could be made than we have been making for many years past was in regard to the examinations. There is no member of the Committee, as far as I am aware, that would support a single examiner as against two examiners, and the only object in asking you to accept this alteration is that it is simply a temporary measure to meet the present financial circumstances in which we unfortunately find ourselves. In a year's time we may have discovered means—and I hope we shall have done so—whereby we can do away with this arrangement. At the same time I think it will be an experiment which will be very well worth carrying out—(Mr. Sumner: I do not think so)—because I think it may lead to a thorough reorganisation of our system of carrying on the examinations. I do not suppose that if this is carried we will ever go back to the same way of conducting our examinations as they are conducted at the present time. (Mr. Mulvey: Abolish them altogether). I think there is room for great improvements to be carried out. Although this may be a retrograde step at the present time, still if we carry in our minds a determination to put, I hope in a very short time, something better than the present system of examination in place of it, no one will regret the step they have taken to-day.

Mr. MULVEY: May I add one word, Sir? Mr. Sumner made the remark that he had been informed by you that this was the only way in which funds could be obtained to carry on the work of the College.

The PRESIDENT: I said retrenchment.

Mr. MULVEY: I would suggest that there is another way: If the members of the profession will come forward and pay a guinea per annum, as they will do if the Bill now before Parliament becomes law, there would be no necessity for this retrograde movement.

Sir JOHN M'FADYEAN: I suppose, as the mover of the resolution, I am allowed to say a word or two in reply? I only want to point out that Mr. Mulvey's last speech contains not an argument but a prophecy, and we are all equally good at that; we can all with the same readiness adopt the mantle of the prophet. I do not propose to offer any prophecy as to what will be the probable result of this appeal to the profession, but I point out to Mr. Mulvey that, if it is as successful as he supposes, we can return to the old system of examination within twelve months.

Mr. MULVEY: We have sufficient funds now to go on for another twelve months. Let us try it for another twelve months and see if the money comes in.

Sir JOHN M'FADYEAN: May I also point out that if this related to the affairs of a private person instead of the affairs of a public body, it would not be considered that the individual in question was exercising very great care and foresight in relying upon charitable subscriptions to carry on his business.

Mr. MULVEY: That I deny; they are not charitable subscriptions.

Sir JOHN M'FADYEAN: Then I will say, rely upon voluntary contributions, and refrain from effecting a perfectly obvious economy in the conduct of his business. I leave it there.

The PRESIDENT: Unless anybody else wants to speak, I will now put the motion moved by Sir John M'Fadyean, "That Bye-law 78 be suspended." This is the crucial matter that governs the subsequent resolutions.

The resolution was then put and carried—three voting against.

The PRESIDENT: Before Mr. Mulvey moves his motion I think it is desirable to draw the attention of the Council to the resolution they have already adopted on the report of the Retrenchment Committee, namely, that, so far as the July Examination is concerned, the examinations in Anatomy in A, and also Stable Management in B, will be conducted as before.

Sir JOHN M'FADYEAN: Has that been adopted.

The PRESIDENT: Yes, that has been adopted.

Motion by Mr. Mulvey. Mr. MULVEY: I propose the resolution standing in my name: "That Section (a) of Bye-law 61 be altered to read as follows:—(a) Anatomy A course of not less than 50 lectures and 20 hours practical instruction on the Anatomy of the Domesticated Animals." It simply means that there will be one examination in Anatomy instead of it being divided. The subject was thoroughly gone into both at the Committee meeting and at the last Council meeting, so that I do not think there is any necessity for me to add anything in reference to it. I move the alteration.

The PRESIDENT: I think Mr. Mulvey, you might move, *en bloc*, all the alterations of which you have given notice.

Sir JOHN M'FADYEAN: I object to that, Sir, unless we are clearly given to understand that this, like the other proposal, is an emergency one, because it must not be allowed to pass, as not open to argument, that this is a measure apart from the economy which it will effect. I ask whether this is to be regarded as an emergency measure.

Mr. MULVEY: So far as I am concerned, no. The question was argued out at the Committee, and it was thought desirable that there should be but one examination in Anatomy.

Mr. TRIGGER: As a member of that Committee, I should like to say that I understood that this was an emergency measure, and an emergency measure only.

The PRESIDENT: It applies to them all.

Mr. MULVEY: I am perfectly willing, if the Council are prepared to pass it in the same way as they passed the other, that it should be regarded as an emergency measure for the present.

Mr. CLARKSON: My understanding was that the whole lot was simply an emergency measure.

The PRESIDENT: Quite so.

Sir JOHN M'FADYEAN: In those circumstances I do not feel called upon to express any reasons why it should not be adopted as a permanent alteration. I have already to the Committee, and I think possibly to the Council also, declared my strong opinion that it is not desirable to effect this alteration. It is not desirable to postpone the student's examination in part of the subject of Anatomy until the end of the second year, but in view of what has just been said I do not propose to raise any opposition.

The PRESIDENT: Then I think, Mr. Mulvey, you can move the rest of the motions that stand in your name, and we can take them altogether.

Mr. MULVEY: Very well, Sir. I also move: "That Bye-law 76 be amended as follows:—Examination A, omit subject 1. Examination B, subject 1 to read:

'Anatomy of Domesticated Animals, written 3 hours; oral 30 minutes.'

'That Bye-law 93 be amended during the continuance of the war by omitting all words after the words 'Final Examination', and adding in their place the word 'before.'

'That the following alterations be made to Schedule II. :—(i) That subject No. 1 be deleted from Examination A. (ii) That subject No. 1, Examination B, be made to read as follows :—1. Anatomy of Domesticated Animals. Candidates will be required to show a knowledge of the Anatomy of Domesticated Animals.'

I move those alterations.

Dr. BRADLEY : I should like to second Mr. Mulvey's proposition, and in view of the fact that this is merely an emergency measure, it will not be necessary for me to bring forward any arguments in support of a permanent adoption of it. Any argument which one might have been prepared to offer can be reserved until such time as it is necessary to reconsider the question. I therefore merely, in the meantime, formally second Mr. Mulvey's proposal.

Sir JOHN M'FADYEAN : Might I suggest that, to safeguard the position and to bring it into line with the recommendation made by the Retrenchment Committee, it would be well if Mr. Mulvey would add to his first motion with regard to taking the whole of the subject of Anatomy at one time, "to come into force on the 1st August, 1916," as I intend to do with regard to the alterations standing in my own name on the Agenda?

Mr. MULVEY : Yes, I quite agree with that.

The PRESIDENT : With that addition, it has been proposed and seconded that the Resolution standing in Mr. Mulvey's name on the Agenda be adopted.

The Resolution was then put and carried unanimously.

Motion by Sir John M'Fadyean. Sir John M'Fadyean : I beg to move the following motions standing in my name on the Agenda :—Bye-law 62: Omit Section (e). Bye-law 63: Add the above Section 62 (e). "Stable Management.—Manipulation of the Domesticated Animals and Principles of Shoeing Healthy Animals. A practical course extending to not less than 20 hours' instructions."

Bye-law 76 : Examination B, omit Section 3. Examination C, Section 2 : In place of "30 minutes" substitute "20 minutes."

Footnote: Omit the words "and shall be examined for 15 minutes by each examiner."

Section 3 : Add, after Veterinary Hygiene and Dietetics, the words "Stable Management and Manipulation of Domesticated Animals, and Principles of Shoeing Healthy Animals"; and for "15 minutes" substitute "20 minutes."

I also move that if they are approved by the Council they come into force on the 1st August, 1916.

Prof. METTAM : I beg to second that.

The Resolution was then put and carried unanimously.

Sir JOHN M'FADYEAN : I now beg to move the following alteration to Bye-law 90: Omit the words "together with an allowance of one guinea per night spent away from home on the business of the examinations." This, it must be admitted, is a very small economy, but at the same time I think it will be in accordance with the wishes of the whole of the Council that the alteration should be made.

Mr. CLARKSON : I second that.

The Resolution was then put and carried unanimously.

Mr. COLEMAN : May I ask one question, Sir? Does a man who has passed all his examinations in B., except

Stable Management, have to come up and go right through the B. examination again?

The PRESIDENT : Yes, he always has done.

Mr. COLEMAN : I do not think you quite follow me Sir. He has passed all his examinations in B., with the exception of Stable Management. Now Stable Management is transferred to C. Has that man to come up and pass his B examination again, or is he allowed to take the Stable Management examination alone?

The PRESIDENT : No; if he fails in one subject under our Bye-laws he fails in all, and that examination is a failure.

This concluded the business of the Special Meeting of Council, and on the motion of Prof. Mettam, seconded by Mr. Price, a hearty vote of thanks was accorded to the President for his conduct in the chair, and the meeting terminated.

SOUTHERN COUNTIES VETERINARY SOCIETY.

(NATIONAL V.M.A.—SOUTHERN BRANCH).

The Thirty-fifth Annual General Meeting was held on Thursday, the 30th March, at the Royal College of Veterinary Surgeons, Red Lion Square, London, W.C. The retiring President, Mr. G. H. Livesey, of Hove, presided; the other members present were Professor Wooldridge, Messrs. J. T. Angwin, Arundel; E. Whitley-Baker, Wimborne; H. A. MacCormack, London; and A. H. Archer, Southsea, Hon. Secretary.

On the proposition of Mr. Archer, seconded by Mr. MacCormack, the minutes of the previous meeting as published in *The Veterinary Record* were taken as read and confirmed, as were also the rules of the Society.

The HON. SEC. reported apologies and expressions of regret at inability to be present from Captain Leeney, A.V.C., Messrs. W. Burt, W. Coveney, E. R. Harding, P. Perkins, and F. G. Samson, the absence of the last named being due to a severe attack of bronchitis.

The HON. SEC. also reported that, as directed at the last meeting, he had written to Mr. Caudwell asking him to re-consider his resignation, and that Mr. Caudwell had replied asking them to accept his decision as final. The Army appointment on which he was at present engaged, he wrote, quite precluded him from attending any meetings.

On the proposition of the President, seconded by Mr. Angwin, the resignation was accepted with regret.

The Hon. Sec. mentioned that in previous years they had generally an invitation to the Annual Conference of the Royal Sanitary Institute, but nothing had arrived this year.

Mr. E. WHITLEY-BAKER : In any case he did not see that they could send a delegate this year at the expense of the Society. Their financial position was still satisfactory, but it would be necessary for them to husband their resources as much as possible.

Mr. ARCHER explained that latterly it had not been any expense to the Society. The year before last he attended at his own expense, and last year, although they voted him two guineas towards his expenses, as no Conference took place there was no occasion for him to incur any expense beyond his own subscription as a private member.

Mr. ANGWIN moved that the question stand over for the present year; this was seconded by Mr. E. Whitley-Baker, and carried.

The HON. SEC. submitted his annual report, which stated that four meetings had taken place as usual. The annual meeting last March, held in London, was attended by six members and one visitor. The June meeting was held at his own residence at Southsea, when

again six members were present. The President kindly allowed the use of his house at Hove, for the meeting in September, and four members attended. The customary December meeting in London took place on the 2nd, instead of in the Cattle Show week, the alteration having been made in view of the fact that the Central Veterinary Medical Association meeting was taking place on the same day, and it was thought that members might like to attend both. Four members only were present at their meeting. The question now arose whether it was advisable in the interests of the Society to continue the meetings or not. If he might make a suggestion it would be to the effect that this matter should be left to the discretion of the President, in conjunction with the Secretary.

An exceedingly interesting and instructive paper was read by Professor Wooldridge at the Southsea meeting, on the Castration of Rigs, but this had been the only paper on professional subjects, although some very instructive impromptu discussions had taken place at the other meetings.

He regretted to report that the tooth instruments belonging to the Society were temporarily missing. They were requisitioned in September, 1914, and his kennelman was sent to Fratton Station and reported having delivered them over to the railway company for transmission to a certain address. No acknowledgment was received by himself of their arrival at their destination, but as the request for them was not repeated, he assumed they got there all right. Nothing had, however, since been heard of them, and unfortunately his man who took them to the station was called up shortly afterwards, and he had been unable to communicate with him. Two members had tendered their resignation during the year, and he was sorry to say there had this year been no addition to their membership.

Mr. WHITLEY-BAKER, commenting on the incident of the dental instruments, suggested that a minute should be entered on their proceedings, that in future no one should send on the instruments to another member without the authority in writing of the Secretary, and that if no acknowledgement of the receipt of the instruments was received within three days of their dispatch the Secretary make inquiries as to their whereabouts. If a matter was inquired into quickly, he added, one could generally ascertain where a parcel had gone to, but if no steps were taken for several months he could quite understand there would be a difficulty in tracing anything.

Mr. MACCORMACK seconded, and it was unanimously agreed to.

Mr. ANGWIN proposed, Mr. MACCORMACK seconded, and the Secretary's report was then formally received and adopted.

Mr. E. WHITLEY-BAKER submitted the Treasurer's financial statement for the past year. The year started with a balance in hand of £20 15s., and they had since received subscriptions £25 6s. 9d., making a total of £46 1s. 9d. Against this there had been disbursements amounting to £18 2s., leaving a balance of £27 19s. 9d. He had also that afternoon received further subscriptions amounting to £3 13s. 6d., so that the total would really be £31 13s. 3d., but out of this there was a donation of £5, which had been voted at a previous meeting, but which had apparently been overlooked. Personally, he thought they would consider the financial position was satisfactory, and he only wished the attendances had been equally so.

The PRESIDENT pointed out that the expenses had averaged about £4 per meeting, and he suggested that it was a question whether the attendance had been worth it.

Mr. WHITLEY-BAKER remarked that it was hardly fair to look at the matter in that light only. For the good of the profession and the members generally, he

thought they should endeavour to hold the Society together, especially at a time like this.

Mr. MACCORMACK also thought it would be a pity to discontinue any of their meetings, if they could possibly avoid it. They were going through a very bad time, but if they would only hang together he was certain it would come all right in the end. All Societies were having the same experience more or less, and he thought they would be showing the white feather if they threw up the sponge.

Mr. ARCHER remarked that he had not suggested the discontinuance of the meetings himself; all he had suggested was that it should be left to the President to decide when to hold them.

Mr. ANGWIN moved the adoption of the Treasurer's statement, and in doing so desired to congratulate Mr. Baker on the satisfactory character of his report.

Mr. MacCormack seconded, and the President, in putting the proposition to the vote, added his congratulations as well as his thanks to Mr. Baker, observing that to show an increased balance in hand in these times was doing uncommonly well.

Prof. WOOLDRIDGE asked if any affiliation fees had been paid to the National.

Mr. WHITLEY-BAKER replied in the negative.

Prof. WOOLDRIDGE explained that he had mentioned this because it was one of those payments which could not very well be made until the end of the year and it was known how many members had paid their subscriptions.

The PRESIDENT said, if necessary, he would propose that Mr. Baker be asked to make out a list of their effective members, and forward a cheque for their contribution in respect of them.

Mr. WHITLEY-BAKER promised to do this, adding that he thought, roughly speaking, he should be able to send the National about £2 2s. While he was on his feet again he also wished to make another suggestion. They had all of them seen the appeal that had been made to members of the profession individually to subscribe to the College. Might he suggest that they, as a Society, send, say two guineas to that Fund. It did seem to him that not only individual members but also the various Societies ought to do their best to support what he regarded as the *alma mater* of their profession.

Prof. WOOLDRIDGE asked if any other Societies had subscribed anything yet.

Mr. MACCORMACK: I do not think they have.

Prof. WOOLDRIDGE explained that he asked this question because he thought it would be a pity if the subscriptions from Societies as distinct from individual members were to be started with £2 2s. only. He quite agreed with their Treasurer that they must be careful, but there might be other Societies which could afford a much larger donation, and he would be inclined to suggest that this matter stand over till the next meeting. In the interval some of the other and more wealthy Societies might have subscribed £5 5s. or £10 10s., but if the subscription list from Societies was started with one of only two guineas others might be content with merely following the example.

Mr. WHITLEY-BAKER remarked that there was an old saying that he gave twice who gave quickly, and their action might be the means of leading other societies to do what they might otherwise not have thought of doing. He suggested that they should vote their subscription of two guineas that day, and that the Secretary in sending it, should so word his letter as to intimate that if at the end of the year they found their financial position permitted it, they would make it five guineas. He quite thought they would be able to do this, but at the present time he did not like to pledge them to it.

Prof. WOOLDRIDGE said he had very great pleasure in seconding this, and seeing that the Council were meet-

ing in the course of the following week, it might be well if they could inform the Secretary of their decision in the meantime.

The question of making a contribution to the Anglo-French Belgian Relief Fund, an appeal for which had been read at the previous meeting, was also brought forward again, but it was decided to let this stand over till the next meeting.

ELECTION OF OFFICERS.

President. Mr. ANGWIN thought they could not do better than ask their retiring President to continue in office for yet another year. (Hear, hear). It was very difficult to get men who could always get away, and more difficult still to get men to give the time Mr. Livesey had given, and if Mr. Livesey would only consent to go on for another year, he was sure it would meet with the unanimous approval of the members.

Mr. ARCHER seconded, and Prof. Wooldridge warmly supported the suggestion.

The PRESIDENT remarked that it was very kind of them to ask him to continue in office again. He had now been in the chair for three years, and he thought that was quite long enough for any one to fill the office. It was also not quite fair to other members that the same person should hold the office for so many years in succession, and if he vacated the chair it would allow of the introduction of some fresh blood, and give a chance to someone who might be able to infuse a little more life and vigour into the Society than he apparently had been able to do. At the same time it was very gratifying to be asked to stay in the chair for another year, because by this time next year they all hoped the war would be over, and he must confess that he should like to hand over the presidency to his successor with things going as they were before the war. If it was their wish that he should continue in the office, he would accede to their request and would do his best. (Applause).

Vice-Presidents. Messrs. C. Roberts, Tunbridge Wells; S. H. Slocock, Hounslow; J. T. Angwin, Arundel and F. G. Samson, Mitcham, were unanimously re-appointed Vice-Presidents on the proposition of Mr. Archer, seconded by Prof. Wooldridge.

Hon. Secretary. The PRESIDENT proposed that Mr. Angwin be asked to accept the office.

Prof. WOOLDRIDGE asked if they could not get Mr. Archer to take over the position again. He knew Mr. Archer had got his military duties to perform, but he thought he could also carry out the work of Secretary for them as well.

Mr. ARCHER remarked that he should much prefer to hand over the office to someone else. He knew that he had not done what he should like to have, and what he would have done in more favourable circumstances. It was very inconvenient to him, as he was away from home.

Prof. WOOLDRIDGE remarked that if it was Mr. Archer's own wish to be relieved of the office, he withdrew his suggestion and seconded Mr. Angwin's nomination. He knew from personal experience that the office of hon. secretary was no sinecure.

Mr. ANGWIN pointed out that as he had been attested, there was a possibility that he might be called up shortly.

Mr. ARCHER stated that if that contingency should arise, he would do his best to act as substitute for him.

Prof. WOOLDRIDGE: I am sure it is very good of you to make such an offer, Mr. Archer.

Mr. ANGWIN, in acceding to the request, observed that he had always had a regard for the Southern Counties Society, because, speaking Masonically—it was his mother lodge, and if he felt he had the assistance of Mr. Archer to fall back upon, he might be just able to manage it. (Hear, hear).

The PRESIDENT proposed the re-appointment of Mr. Whitley-Baker as hon. treasurer, and this was seconded by Mr. Angwin and carried by acclamation.

The PRESIDENT remarked that before they proceeded with the other business, he wished to propose a very hearty vote of thanks to Mr. Archer for the way in which he had carried out the duties of honorary secretary during the time he had held the office. He had carried out the duties under great disability latterly, owing to his work being in one place and his home in another, and the Society was much indebted to him for what he had done for it.

Mr. ANGWIN seconded, and expressed the hope that the Society would be able to say the same of himself. He confessed he was rather chary of taking the job on, but as he had said, he would try and do his best. He had much pleasure in seconding the vote of thanks.

The proposition was carried by acclamation.

Mr. ARCHER replied that he was very much obliged for the kind things that had been said about him and his work. He had tried to do his best, but he knew it had not been as good as it would have been under more favourable circumstances. He was quite sure Mr. Angwin would be able to make a better job of it, and he wished him God speed, and in his work every success.

On the proposition of the President, seconded by Mr. Whitley-Baker, and supported by Mr. Archer, a hearty vote of thanks was also accorded Mr. H. W. Aylott for his unfailing and ever-ready assistance.

On the appointment of the Executive Committee coming up for consideration, Prof. Wooldridge raised the point whether they ought not to have another Vice-President now that Mr. Angwin had been appointed Hon. Secretary. It was explained that there was nothing in the rules to prevent a Vice-President being also Hon. Secretary, or *vice versa*.

Mr. G. W. BLOXOME was elected a Vice-President in the place of Mr. Angwin, on the proposition of Mr. Angwin, seconded by Mr. MacCormack.

Executive Committee. Messrs. A. H. ARCHER, H. A. MACCORMACK, C. PACK and REG. F. WALL were elected on the proposition of the President, seconded by Mr. Angwin.

On the proposition of Mr. Archer, seconded by Mr. MacCormack, Arundel was suggested for the next meeting, about the end of June, but the actual date was left in the hands of the President and Hon. Secretary.

Under the heading of Post-mortem Specimens and Cases of Interest, Mr. Archer related a case of an aneurism in the coeliac axis of a mule, which gave rise to a short but interesting discussion, and the proceedings then terminated. JAS. T. ANGWIN, Hon. Sec.

Donations to R.O.V.S.

Airey, F., Biggleswade, Beds	£1	1	0
G. A. Bushman, Islington, N.	1	1	0
H. Chown, Capt. A.V.O.	1	1	0
J. N. Cooper, Capt. A.V.O.	1	1	0
C. Crowhurst, Bodmin, Cornwall	1	1	0
J. Davidson, Newcastle-on-Tyne	1	1	0
F. L. Gooch, Stamford	1	1	0
R. J. Hickes, Market Weighton, Yorks	1	1	0
G. A. Kelly, Capt. A.V.O.	1	1	0
A. H. McDougall, Glasgow	1	1	0
C. C. Nesling, Framlingham, Sussex	1	1	0
J. D. Rankin, Colne, Lancs	1	1	0
J. H. Ripley, Hurst Green, Sussex	1	1	0
F. J. Thornton, Dorchester, Dorset	1	1	0
G. Yates, Harrow	1	1	0
Previously acknowledged	£118	10	0
Less entered twice (Capt. Hobbs)	1	1	0
	117	9	0
	£133	4	0

SUBCUTANEOUS INJECTION OF DISTILLED WATER FOR ULCERS: LOCAL USE OF PETROL IN HUMAN PRACTICE.

Dr. G. ARBOUR STEPHENS, M.D., B.S., B.SC. LOND., contributes the following to *The Lancet*.

"The patient was aged 63, and had been suffering for over six months from ulcers, they were discharging considerably and looked almost gangrenous.

Mercury and iodides had been tried internally and lotio nigra, red wash, and fomentations externally had been tried with no success, so I suggested that a subcutaneous injection of distilled water be given, and if necessary repeated two or three times. At the same time the patient was given three-grain doses of calcium iodide three times daily for four weeks. After the first injection, which was given on August 19th in the loose tissue below the shoulder-blade, her general condition was greatly improved, whilst the ulcers looked healthy and healing. The second injection was given on August 26th, and the third on Sept. 13th, by which time nearly all the ulcers except that on the thigh had closed and the smaller ones were covered with healthy skin. At the same time the patient's general appearance was greatly improved.

No blood test was employed, so it is difficult to state definitely that the ulcers were syphilitic, but the appearances were very suggestive.

Some months ago I wrote on the value of injections of distilled water in syphilis, and have had a large number of good results since then. The theory advanced was that the surface tension of the corpuscles was so affected as to allow of the more ready mobilisation of the necessary antibodies, and, I would add, improve their diapedic powers. Much depends on the rate at which diapedesis occurs, and in a disease such as the one herein reported an increased rate of diapedesis seems to have been induced, with very successful results.

The local treatment employed was petrol for washing the wounds, and when completely evaporated boric acid powder was dusted on the wounds. Two years ago I advocated the employment of petrol, and since then its value in the local treatment of wounds has been thoroughly tested and proved.

Water is of no value for cleaning wounds in which colloidal matter has accumulated, whilst petrol, which dissolves fats and alters the surface tension, produces a clean wound very quickly, and provided it is allowed to evaporate freely there is no pain."

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, April 6.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieut. W. H. B. Medd relinquishes his commission (Mar. 26).

April 12.

Temp. Lieut. to be temp. Capt.:—E. J. Phair (Mar. 30).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

April 8.

To be Lieut.:—S. S. Forster (April 9).

April 10.

Capt. F. W. Pawlett to be Deputy Asst. Dir. of Vet. Services, and granted temp. rank of Major whilst holding the appointment (March 15).

Capt. W. S. Carless to be Asst. Dir. of Vet. Services, and granted temp. rank of Major whilst holding the appointment (April 1).

The following casualties are reported:—

DIED—Pte. H. K. Nunn, S.E./15137.
Pte. R. Squires, 8705.

WOUNDED—Capt. T. Z. Woods, Canadian A.V.C.

CORRESPONDENCE.

THE TAX ON MOTOR LICENSES.

Sir,—I am writing the Secretary of the R.C.V.S. requesting him to ask his Council to at once move in the matter of obtaining the same concession for us as that given to the medical profession in motor taxation, as this is the opportune moment now that a change is being made in rate.

I trust that every practitioner will immediately approach all the M.P.s. whom they can influence in favour of this just abatement.—yours truly,

Athy, 8th April.

JOHN HOLLAND,

Dear Sir,—I hope every veterinary surgeon, whether he drives a motor car or not, will write his M.P. for his support to our demand to be placed on the same terms as medical practitioners in relation to the Motor Car Taxes.

I am taking it for granted that our Council is quite prepared for the coming fight.—Yours truly,

HUGH O. RICHARD.

P.S.—Mr. Haydn Jones, M.P. for Merioneth, has promised to support our appeal for the rebate on the Licence Tax.—H. O. R.

Dolafon, Corwen.

Dear Sir,—We cannot but view with alarm the proposal to increase very considerably the tax on the veterinary surgeon's car. Apparently we are to pay just as much as the individual who keeps his car for pleasure purposes. Many of us run American cars, most of which exceed 16 h.p., and to me it seems apparent that the suggested scale of taxation has been brought about by the influence of the motor manufacturers of this country as a means of protecting their industry by making the running of the American car practically prohibitive for the man of limited means.

As a profession we are numerically small, with the result that from an electioneering point of view our influence is not great, but I think if we were to voice our grievance in a proper way we should not be altogether ignored.

M.B.C.V.S.

[Reference to this matter in the report of Meeting of Council will be found at p. 467.]

PROMOTION AND PAY, T.F. AND S.R.

Sir,—About the middle of January a circular letter was sent round to all officers Army Veterinary Corps from the Director of Veterinary Services, conveying the information that officers Territorial Force and Special Reserve, after twelve months' service would be promoted to the rank of Captain. Acting on said letter, a number of officers of the Special Reserve with over twelve months' active service considered they were entitled to the higher rank, and acted accordingly. Now those officers with promotion to higher rank are entitled to increased pay, but on application for such to their agents are informed that they cannot be credited until such time as their names appear in the Gazette.

As this matter seems to want adjusting, I hope that the publication of the above facts will direct attention to it.—Yours faithfully,

"AFFECTED ONE."

April 8th.

ORDER OF THE BOARD OF AGRICULTURE AND FISHERIES.

(Dated 31st March, 1916).

Maintenance of Live Stock Order of 1916.

The Board of Agriculture and Fisheries, by virtue and in exercise of the powers vested in them under the Maintenance of Live Stock Act, 1915, and for the purpose of maintaining a sufficient stock of cattle, do hereby order as follows:—

Amendment of the Maintenance of Live Stock Order of 1915.

1. The Maintenance of Live Stock Order of 1915 is hereby modified in the following manner:—

(i) Paragraph (2) of Article 2, which exempts from the restriction of slaughter calves of cows of certain dairy breeds, is hereby revoked;

(ii.) In paragraph (3) of Article 2, the sum of forty shillings shall be substituted for the sum of thirty shillings;

(iii.) Article 3 (*Exceptions from Restrictions*) shall be read as if it contained the following paragraph:—“(d) slaughter of a calf in any area in which, by an Order under the Diseases of Animals Acts, 1894 to 1914, relating to foot-and-mouth disease, the sale of calves at a market or sale-yard is prohibited or restricted to animals intended for immediate slaughter.”

Commencement.

2. This Order shall come into operation on the tenth day of April, nineteen hundred and sixteen.

Short Title.

3. This Order may be cited as the MAINTENANCE OF LIVE STOCK ORDER OF 1916.

In witness whereof the Board of Agriculture and Fisheries have hereunto set their Official Seal, this thirty-first day of March, nineteen hundred and sixteen.

SIDNEY OLIVIER, Secretary.

[We regret that this did not reach us until the morning of 7th inst., too late for inclusion in that week's issue of V.R.]

National expenditure for Pork.

When the war came in August, 1914, amongst other farming activities I was breeding pedigree pigs on novel open-air lines. Very shortly the price of feeding material rose rapidly, so much so that tens of thousands of sows and other pigs were sent to the butchers, with the result that there is a big shortage of pigs throughout the country, and this shortage also exists on the Continent for various reasons.

During the last year the stupendous sum of twenty-four million pounds (£24,000,000) has been paid away by this country to foreign ones for pig meat in various forms. All this money could be kept here.—S. F. EDGE, in *Farm and Home*.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended April 8	18	19					46	85	4	125	396
Corresponding week in	1915 ...	16	18				‡37	‡85	1	93	360
	1914 ...	13	13		2	3	39	59	1	72	655
	1913 ...	15	15		1	5	48	103	2	41	573
Total for 15 weeks, 1916	199	227	1	24	20	59	1109	2693	157	1289	4007
Corresponding period in	1915 ...	236	265		9	14	‡105	‡229	137	1097	4550
	1914 ...	278	297	11	30	75	1022	1875	139	927	8786
	1913 ...	200	217		50	170	1127	2373	110	546	6933

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, April 11, 1916

† Counties affected, animals attacked:—

Excluding outbreaks in army horses.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
IRELAND.											
Week ended April 8	...	...	...	...	...	...	Outbreaks 2		6	8	30
Corresponding Week in	1915 ...	...	...	...	1	3	...		22	9	35
	1914 ...	...	2	8	...	...	3		9	9	25
	1913 ...	...	...	...	...	...	...		10	...	13
Total for 15 weeks, 1916	1	5	...	...	...	...	23		190	85	421
Corresponding period in	1915 ...	1	1	...	1	3	13		202	78	465
	1914 ...	...	62	812	...	...	37		305	80	357
	1913 ...	...	...	...	...	...	75		230	40	245

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, April 10, 1916.

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1450

APRIL 22, 1916.

VOL. XXVIII.

THE COUNCIL MEETING.

Before leaving the subject of work of the Council which has benefited the profession, to those instances referred to last week should be added an earlier one—the part they took in securing substantive rank and improved conditions of service for the Army men. This was a very material advance, and was obtained by the co-operation of the whole civil side of the profession, including the Schools, and in which the Council R.C.V.S. bore their full share.

Coming now to the Council meeting and to some effects of the war:—For the third time since war began, the Councilmen were too few to authorise the restoration or removal of names; and so much of the Registration Committee's work is not yet effective. We do not remember this ever happening in the days of peace; but since this is only the seventh general Council meeting held during the war, it has become regrettably frequent. Generally, as in the present instance, it means that men awaiting restoration have to wait three months longer.

Two other points show the war's effect upon the supply of students. The number of educational certificates examined was very small indeed—less than a quarter of those examined at the April meeting last year. Further, it came out that fully thirty-nine third and fourth year students are now in the army; and an attempt is to be made—not too soon—to have these brought back to their studies. This is being done in the case of medical students, and seems much more necessary with regard to ours. The supply of students and young graduates will be one of the most serious questions we have to face in the very near future.

As will be seen from our pages this week, the alterations in the Bye-laws concerning examinations, which appeared in our pages last week, have been confirmed at the subsequent meeting.

VOMITION IN ANIMALS.

We print this week a very useful piece of work on this subject in the paper by Mr. W. R. Davis. The author has undertaken a comparatively uninviting piece of "donkey work" in the collation and grouping of these cases. It has not advanced our knowledge of the troubles, but it is suggestive, and it has made advance easier by providing a fresh start point. Others may now add to it with little trouble to themselves and with increasing benefit both to their fellow practitioners and to general pathological knowledge.

Out of the evidence given again comes the lesson that post-mortem examination should be made

whenever possible. The problems of digestion and attendant processes are exceedingly complex. Even in human pathology, despite a large amount of highly skilled and valuable work, comparatively little progress has been made, and that work is of no avail to us in the troubles of the herbivora. The author's collation makes it evident that several well-known symptoms are by no means specific of the causes producing them. Hence the necessity for further evidence, for careful observations on post-mortem conditions, and for reporting them.

SIGNIFICANCE OF VOMITING IN DOMESTICATED ANIMALS.*

By W. R. DAVIS, M.R.C.V.S., Enfield.

Vomiting is the forcible expulsion of the contents of the stomach through the œsophagus.

The act may be induced by stimulation either of the vomiting centre (by apomorphia for instance) or of various afferent nerves. The centre for vomition is said to be divided into three parts—one being in the medulla, one in the corpora quadrigemina, and one in the lenticular ganglion. They are connected by the vagus with the stomach and various other organs.

Irritation of any of the branches of this very widely distributed nerve is capable of influencing the vomiting centre, thence impulses may come from numerous other organs beside the stomach—œsophagus, uterus, liver—and give rise to vomition.

Very many stimuli are capable of exciting vomiting—vegetable and mineral poisons, emetics, indigestible food, intestinal obstruction, ruptured stomach or intestines, peritonitis, brain, lung, kidney, and uterine diseases; and in man disturbances of the balancing centre (sea sickness) visual and olfactory impressions.

Intra-abdominal pressure, caused by contraction of the abdominal muscles, contraction of the muscular walls of the stomach, and active dilatation of the cardia are the three factors in the mechanism of vomiting.

Although seldom observed in cattle, it ought to be easy in these animals, and may be said to occur physiologically during rumination.

In the horse everything seems opposed to vomition; the stomach is small and never comes in contact with the abdominal walls, the cardia is surrounded by muscular bands, and the pylorus is constantly open and situated close to the cardia, yet vomition is much more common in the horse than in cattle.

In the dog, pig, and cat vomiting is easily produced, and is common.

VOMITING IN THE HORSE.

It might be thought that one ought to distinguish between attempts at vomition and the completed act in considering this part of the subject, because many so called cases of vomiting in the horse are nothing more

* Read at the Meeting of the Central Veterinary Society, on April 6th.

than vomiting movements, or these added to expulsion of frothy saliva in cases of spasm or obstruction of the œsophagus; but as a matter of fact attempts at vomiting without discharge of stomach contents are quite often associated in the horse with grave lesions of the stomach or intestines, and are in effect real cases of vomiting, and therefore we will consider them together. Although not common in the horse vomiting is by no means rare, and certainly is not exceptional, as some writers have stated. A great diversity of opinion exists as to why horses so seldom vomit; usually anatomical reasons are given to explain its rarity. It is possible that want of development of the vomiting centre is the real cause.

The late Mr. Hunting states (*Veterinary Record*, January 4, 1908) that over-distention of the stomach stretching out the mucosa and allowing the cardia to open permitted vomiting, while Prof. Cadéac (*Veterinary Record*, March 14, 1908) gives it as his opinion that the more the stomach distends the more firmly the œsophageal orifice closes, and hence rupture of the stomach. It is stated in Smith's "Physiology" that emetics which owe their action to stimulation of the vomiting centre (antim., pot. tart, ipecac, apomorphia) do not cause vomiting in the horse (nor does this animal vomit from sea-sickness, though it suffers from it). This may be true for the substances named, but does not apply to veratrin—got from *Veratrum officinale*—*Cebadilla* (now used by the Huns against the allied troops to cause irritation of the eyes and nose) which promptly produces emesis in this animal when given intravenously or subcutaneously.

Prof. Kauffmann says: "Vomiting is very painful and very rare in herbivora, and when it does occur it is a grave sign, indicating existence of profound disorders which may endanger life, especially in solipedes."

Undoubtedly a frequent lesion found post-mortem in horses that have vomited is rupture of the stomach, seated usually at the greater curvature. However, vomiting may occur from rupture of the intestine; and a horse may die from rupture of the stomach or of the intestine without showing this symptom. Again, horses quite frequently recover after having vomited, and may, indeed, manifest this symptom repeatedly at intervals of a few months.

After the administration of Tinct. of aconite horses sometimes show alarming symptoms which suggest attempts at vomiting; in choking, too, the same movements may be observed.

In determining what the conditions are that set up vomiting in individual cases regard must be had to the state of the pulse, presence or absence of pain, tremors, sweats, and the general behaviour and appearance of the animal.

I have collected some cases published in *The Veterinary Record* during the last few years, and with two or three observations of my own, place them under the following headings:—

Vomiting followed by recovery.

Vomiting resulting in death, and found post-mortem to be apparently due to:

- Rupture of the stomach.
- Rupture of the intestine.
- Inflammation of the stomach.
- Alterations in the œsophagus.

VOMITING FOLLOWED BY RECOVERY.

Since our last meeting I was called one night to a horse which had been turned out with three others in a field. The attendant took a truss of hay for them and shook it out on the grass. My patient, quite gay and lively came up with the others and commenced feeding. Before the man left the field he noticed that the horse was standing back and coughing, and that froth was expelled from the nose and mouth, and he led the horse

home. The animal coughed and discharged froth all the way to the stable, and, as the owner said, you could trace him by the discharge along the road.

When I arrived the horse was standing quietly in his box—pulse and respirations were satisfactory, white frothy material hung about the nostrils. Suddenly the horse coughed two or three times, and discharged violently through nostrils and mouth a quantity of the white froth; then he made vomiting movements—lowering the neck and bringing the chin in towards the breast and again expelling froth. This he repeated several times during a quarter of an hour. I palpated the neck carefully, but could find no obstruction. I then seized the tongue and passed my hand as far as the epiglottis, but found nothing. I administered half-a-pint of linseed oil and left my patient, to find him next morning feeding and quite alright.

What was it that set up these alarming symptoms? In my opinion a bolus of hastily swallowed, insufficiently masticated hay had been impacted somewhere in the œsophagus probably in the thoracic portion of that tube, and the froth was churned up saliva that the animal was unable to pass into the stomach.

Mr. Parker, M.R.C.V.S., Faringdon (*Veterinary Record*, June 1914), relates that he was called to a chaser that had vomited "all over the box." On the left side of the neck over the jugular vein was a swelling which, when pressed on, immediately caused the patient to vomit. Next day the horse had quite recovered, and was sent home by train.

Mr. F. B. O. Taylor, M.R.C.V.S. (*Veterinary Record*, October 24th, 1903), states that a mare he attended for colic had several drinks, and discharged five or six times in half-an-hour several ounces of dark foetid fluid through the nostrils, yet recovered in two days.

Last December I was called to a donkey, and found that it had vomited a large quantity of green material, with which the nostrils were still soiled. The patient was, on my arrival, quite free from any signs of illness and would have eaten. On searching the field where it had been grazing, I found a privet fence at which the animal had been nibbling. Privet is known to give rise to gastritis, and I attributed the symptoms to its ingestion.

Mr. Graham Gillam (March 11th, 1911). Six year old mare affected with colic. After several gripe drinks had given no relief, administered gr. ij Eserin intratracheally. Patient vomited a quart of food through the nostrils, was much easier, and recovered.

Mr. J. Paul (July 4th, 1908). Horse vomited ingesta at intervals for two days. Bismuth was administered. The horse recovered.

Mr. R. Bryden (June 6th, 1908), says that he saw an aged cart-horse affected with colic. Every half-hour or so the patient would plant the two fore feet well in front, lower the neck, shriek and vomit fluid ingesta through the nostrils. Had Eserin subcutaneously. Recovery in a few days.

Another case was that of an aged gelding that during an attack of colic walked round the box, would stop, lower the neck, bolus observed coming up the neck, and the patient vomited through the nostrils. The horse recovered in a couple of days.

Mr. G. A. Morgan (Dec. 27, 1902), describes what appeared at first to be an ordinary case of colic. Suddenly the patient extended her legs, and vomited from mouth and nostrils; yet recovered.

Mr. W. H. Williamson states that a horse he attended vomited froth every five or ten minutes for two hours. Visible convulsive movements of œsophagus. There was no food with the vomit. Choking, Mr. Williamson considers out of the question, as the animal had been tied up before an empty manger for four hours before being taken ill. Suggests the bursting of an abscess as cause. The horse recovered.

Mr. T. C. Howatson (April 23, 1904). A cart mare was given green food for first time. Showed pain, sweating. Would draw herself together, squeal; lump seen passing up oesophagus, and green frothy fluid trickled from nostrils every three or four minutes. Morphia gr. viij given subcutaneously: recovery.

Mr. Howatson also saw a hunter after a hard day develop colic sometime after feeding, and then present symptoms like those described in the former case. This patient recovered after the exhibition of Morphia, eight grains subcutaneously.

A third case was in a hunter which was similarly affected; recovery in this animal was delayed for three weeks.

Mr. R. Clunas (March 9, 1901), reports that he attended a four-year-old gelding for colic. There was sweating and evidence of pretty severe pain, the patient at times lying on the back. The animal drew head and feet together, and made a noise as if choking. It lay on the side, head resting on the ground, and vomited freely through nostrils. Chopped hay and oats poured out for several minutes. The vomit was sour and stank. The horse did not get up for several hours, but made a good recovery.

Mr. Clunas remarks on

The ease with which vomiting took place.

The quantity emitted.

The relief which the vomiting gave.

VOMITING FOLLOWED BY DEATH.

P.M.—Rupture of the Stomach.

Mr. Scott (June 29, 1901), describes the case of a mare that vomited ingesta and died. A rent 12 in. long found in the greater curvature of the stomach.

Mr. R. Mason (Oct. 28, 1901), reports that two horses that he attended, vomited frequently and retched. They both died. A ruptured stomach was found in one patient. No p.m. on the other animal.

Major Martin (May 16, 1908), relates a case of a horse that vomited—yellowish fluid pouring from the nostrils. On post-mortem, Major Martin found a rupture of the stomach due to Spiroptera megastoma.

Last year I reported in *The Veterinary Record* that a young mare was seized with rather violent colic which lasted for twenty hours. Towards the end she repeatedly made attempts at vomition though nothing was expelled. Post-mortem: I observed a large rupture of a greatly overloaded stomach.

P.M.—Inflammation of the Stomach.

Mr. Bryden (June 6, 1908), saw a nine-year-old mare suffering from colic. At varying intervals she would place the feet well in front, lower the neck, a bolus was seen to go up the oesophagus and foul smelling ingesta was vomited. The mare died and post mortem only reddening of stomach found.

Mr. E. Wallis Hoare (April 9, 1908), describes a similar case in which, besides gastritis, an inflamed condition of the oesophagus was observed.

Mr. T. C. Howatson (April 23, 1904), saw a horse that died after making repeated vomiting movements during which fluid trickled from the nostrils. Post-mortem, intense gastritis.

P.M.—Rupture of Intestine.

Mr. Hamilton Kirk (Dec. 16, 1911), attended a seven-year-old cart mare for colic. She vomited through the nose and mouth at intervals all night, and died next day. Post-mortem: Stomach and intestines greatly distended with food, and a big rent in the caecum and one in the colon.

P.M.—Alterations of Oesophagus.

Mr. J. H. Parker (1908) reports that a seventeen-year-old carriage gelding had four attacks of vomiting in one year. The patient would arch the neck, and bring up,

mostly through the nostrils, a lot of frothy mucus. For the next two years the animal had frequent similar attacks and died of broncho-pneumonia. Post-mortem—Dilatation of oesophagus close to stomach. The wall of gullet was thinned and a pouch had formed that would hold a pint.

Grosjean and Lesbonyries (Feb. 20, 1909) relate the case of a horse that at intervals, from 1904 to 1907, had attacks of colic, during which it vomited undigested food. The animal finally died from broncho-pneumonia. Post-mortem—A dilatation of the oesophagus existed close to the stomach, of which it was really a diverticulum, and was formed by hernia of the mucous membrane through a rupture in the muscular wall of the oesophagus. The pouch was the size of a man's head. As one so frequently associates vomiting with rupture of the stomach it may be of interest to mention three cases in which the post-mortem revealed this lesion, and yet during life no vomiting movements were present.

Mr. J. A. Todd (Feb. 11, 1905) records that he attended an aged brougham horse, ill with colic fourteen hours. During the attack there was no acute pain, no salivation, no attempt at vomition; yet post mortem, rupture of the stomach was found.

Mr. E. Wallis Hoare (Jan. 28, 1905) states that a cart gelding attended by him was uneasy, although no acute pain was manifested. There was great salivation. The horse did not roll, and there was no attempt at vomition. Post-mortem, rupture of the stomach.

The same author (April 9, 1908, saw a horse that died from colic during which there was no vomiting. Post-mortem, rupture of intestine.

Mr. Connochie (Feb. 21, 1901) attended a colt that vomited whenever the animal was fed indoors. The vomiting was frequently repeated, but when the colt was kept on a bare pasture the vomiting did not occur. The animal died. Post-mortem, an oesophageal pouch was found.

VOMITING IN BOVINES.

Whereas everything is unfavourable for the accomplishment of the act of vomition in equines, in bovines everything favours it. What, indeed, is rumination but a sort of vomiting? However, the forcible expulsion of the contents of the stomach is in my experience very rare in these animals. It was, indeed, held by Hurtzel d'Arboval that bovines are unable to vomit, and that the so-called vomiting in these animals is only a regurgitation of ingesta from the rumen—what is called in this country, chewing the cud, or dropping the cud.

Prof. Feuch, in Cruzel's "Maladies of the Bovine Species," combats this view, and states that in bovines vomiting is a pathological condition, and not merely tumultuous rumination, for he has observed matter coming not only from the rumen but also from the abomasum, and he quotes cases in which the animals placed themselves in posture to accomplish the act, much as horses do. The case in which he recognises the vomited material as coming from the abomasum turned out to be due to scirrhus of the pylorus.

A German authority, Bambauer, asserts that repletion is rarely a cause of vomiting in the ox, and maintains that the act is due in this animal to alarming pathological conditions except in rare cases. Adhesions of the stomachs to the abdominal wall or to the diaphragm after their perforation by a foreign body he has found to be the cause in several cases.

If spewing the cud is to be called vomiting and not merely regurgitation, this is the common form observed in cattle. The affected animal may appear to be in health, will lie down, and with scarcely an effort will pass out of the mouth great quantities of ingesta from the rumen. Mr. Nash, Richmond, Yorks, often saw cattle spew the cud. They generally recover. He once had a case that went on for weeks. The trough would

be half full of masticated hay and fluid. The animal recovered and was fatted.

Mr. H. Begg (Sept. 9, 1911) thinks spewing the cud serious; and protracted chronic emissions, he states, are associated with malignant disease of the oesophagus, but the growth may be elsewhere. When emesis is due to irritant foods vomiting is sudden, and complete, and salutary; prognosis he considers is never favourable when the case is protracted, though he has seen a cow recover suddenly—probably an abscess had burst.

Mr. G. Mayall (Sept. 2, 1911) states that vomiting in cows is due to rumen distension through bulky inferior foods and over supply of water.

Professor Peuch has seen cows vomit after big feed of green lucerne, and considers that those cases in which a part of the cud escapes through the sides of the mouth are due to relaxation of the masseter muscles.

Mr. Wallis Hoare (*V.R.*, Aug. 26, 1911). Has seen two cases in which cows fed well, but in rumination portions were ejected and a considerable heap found.

Mr. Scott, Bridgwater (Nov. 18, 1911), reports that 68 hours after a cow had got into an apple orchard and eaten a lot of fallen apples she vomited digested grass and 130 to 160 apples, nearly all whole, not digested, and made a good recovery.

Mr. Wallis Hoare (Mar. 30, 1907) writes that a cow, after eating rhododendron leaves, vomited through the nose and mouth large quantities of semi-fluid ingesta, and recovered.

Mr. H. B. Eve (July 6, 1907) saw a cow after eating rhododendron show delirium and finally get into a semi-comatose condition. The animal vomited freely and recovered.

Rhododendron appears to be a powerful emetic for ruminants, and this can hardly be due to its irritant effect on the stomach. I have seen cows die from arsenical poisoning in which there was perforation, and yet there was no vomiting.

SHEEP: PIGS: DOGS: CATS.

In sheep vomiting is nearly always due to vegetable poisoning, and ingestion of rhododendron leaves is frequently the agent.

Vomiting in the pig is said to be easily induced, to be common, and as a symptom to be usually without any gravity.

My experience by no means coincides with these findings. Within the last six months I have had two cases of vomiting in pigs, and both the patients died inside of twelve hours after emesis. On one pig I made a p.m. and found intense gastritis.

In swine fever inflammation of the stomach is often observed as a post-mortem lesion, but it is rarely accompanied by vomiting.

The dog is, of all animals, the one in which vomiting is most frequent. I have heard it asserted that a dog could induce the act at will—make successful efforts to bring up medicine that it had been forced to take. I have a client whose Pom suffers from indigestion accompanied by loud intra-abdominal buzzing sounds. Whenever this comes on the patient insists on being let out, even in the middle of the night, when he immediately eats grass, becomes sick, and gets relief.

Apart from the vomiting that is so often associated with distemper, with gastritis, with the presence of worms, persistent vomiting in the dog is seen in impaction of the intestine with a stone or other foreign body. The material emitted is at first frothy mucus which is later bile-stained, and finally may be faecal. Faecal vomiting is, I think, seen also in Stuttgart Disease. Malignant disease of the liver or other abdominal organ is mostly accompanied by frequent vomiting. One symptom of nephritis in the dog is uncontrollable vomiting. I recently made a post-mortem on an

Irish terrier and found contracted kidney. The animal had vomited persistently for weeks. In 1914 I recorded a case of abdominal tuberculosis in a bull dog: a prominent symptom in this case was frequent vomiting.

Though vomiting is less frequent in the cat than in the dog, the act in each of these animals has close analogies.

Royal College of Veterinary Surgeons.

SPECIAL MEETING OF COUNCIL.

A Special Meeting of Council of the Royal College of Veterinary Surgeons was held at 10 Red Lion Square, London, W.C., on Friday, 14th April, Mr. F. W. GARNETT, J.P., President, occupied the Chair. The following members were present: Messrs. Banham, Coleman; Profs. Sir John M'Fadyean, Mettam; Mr. Price; Major-Gen. Pringle; Profs. Share-Jones, Shave; Mr. Sloccock; Major-Gen. Thomson; and Mr. Fred Bullock, Secretary.

Apologies for absence were received from Messrs. A. Lawson, J. McKinna, W. J. Mulvey, W. Shipley, and H. Sumner.

MINUTES.

The SECRETARY read the minutes of the Special meeting held on the 7th April, and they were confirmed.

CONFIRMATION OF ALTERATIONS TO BYE-LAWS.

Sir JOHN M'FADYEAN formally moved the confirmation of the alterations to Bye-laws made at the Special meeting of Council held on the 7th inst. [These were published in full in our last issue.]

Major-Gen. THOMSON seconded the motion, which was carried unanimously; and, on the motion of Prof. METTAM, seconded by Mr. SLOCOCK, authority was given for the seal of the College to be affixed to the alterations.

This concluded the business of the Special meeting of Council.

Immediately following the special meeting, an Ordinary Meeting of Council was held, Mr. F. W. GARNETT, J.P., President, again occupied the Chair, and the same members were present as at the last meeting, with the addition of Sir Stewart Stockman.

The minutes of the meeting of the 2nd July, 1915, were read, and confirmed.

CORRESPONDENCE.

The SECRETARY read the following letter:—

13th April, 1916.

Dear Mr. Bullock,

Registration.

Court Martial proceedings against Veterinary Officers.

We have seen the Deputy Judge Advocate-General this morning by appointment, and it is now arranged that, whenever Court Martial findings are sent on by the War Office to the College, we are to be entitled to a copy of the whole of the Court Martial proceedings on payment of a small fee. We discussed with the Deputy Judge Advocate-General the subject of complaints against Veterinary Officers in which they had merely been dismissed the service in accordance with the terms of their agreements, and had not been tried by Court Martial, and we explained to him the total inability of the Committee to deal with such cases in the absence of all material evidence, and this he quite saw. He said it

was not at present in his department to deal with the question, but that a communication had better be addressed to the Secretary of State for War, and he was quite sure careful consideration would be given to it. If you have not already communicated with the War Office on the cases which came up last Thursday, perhaps you would be kind enough to send them on to us, as they would form a very good basis for the application we propose should be made.

Yours very truly,

GEO. THATCHER AND SON.

The PRESIDENT: This refers to about five cases that had not been dealt with by Court Martial. If we can get a minute of the evidence for a small fee, it will put us in a very much better position than we are at present. I take it it will be your wish to get this from the Judge Advocate-General, and that Mr. Thatcher be instructed to proceed with the matter.

Sir JOHN M'FADYEAN: I move that. I think the letter is very satisfactory.

Major-Gen. THOMSON seconded the motion, which was carried unanimously.

Election of Examiners, 1916. Membership.

The following gentlemen had been nominated as examiners:—

Anatomy of Domesticated Animals.

Class A.

J. Blakeway, F.R.C.V.S., nominated by F. W. Garnett

B. H. Mellon, M.R.C.V.S.

W. Cargill Patrick, F.R.C.V.S.

Chemistry and Elementary Physics.

J. M. H. Munro, D.Sc., M.R.C.S., L.R.C.P., F.I.C.

W. J. Mulvey

H. Somerville, B.Sc., M.R.C.S., L.R.C.P., F.C.S.

Biology: Elementary Zoology and Botany.

J. R. Ainsworth-Davis, M.A., F.C.P., F.Z.S.

W. B. Bottomley, Ph.D., M.A., F.L.S., F.C.S.

Anatomy of Domesticated Animals.

Class B.

H. G. Bowes, F.R.C.V.S., Capt. A.V.C. (T.)

W. E. Ison, F.R.C.V.S.

Histology and Physiology.

W. Legge Symes, M.R.C.S.

W. H. Thompson, M.D., Sc.D., F.R.C.S. A. E. Mettam

Stable Management.

H. J. Dawes, F.R.C.V.S.

R. C. Trigger

W. S. Mulvey, F.R.C.V.S., Major R.E. (T.F.)

Pathology, Bacteriology and Protozoology.

Class C.

E. J. McWeeney, M.A., M.D., F.R.C.P.I. W. J. Mulvey

A. E. Mettam

H. C. Reeks, F.R.C.V.S.

Materia Medica and Toxicology.

H. Begg, F.R.C.V.S.

A. Campbell

J. Donald, F.R.C.V.S.

J. Peddie, F.R.C.V.S., Major A.V.C. (T.F.) O. C. Bradley

Veterinary Hygiene and Dietetics, Stable Management, Shoeing, etc.

W. S. Mulvey, F.R.C.V.S., Major R.E. (T.F.)

H. Taylor, F.R.C.V.S.

J. Dunstan

W. Woods, F.R.C.V.S.

W. J. Mulvey

Principles and Practice of Veterinary Medicine;

Meat Inspection.

Class D.

N. Almond, F.R.C.V.S.

F. W. Chamberlain

W. H. Bloye, F.R.C.V.S.

W. J. Mulvey

Principles and Practice of Veterinary Surgery and Obstetrics.

F. L. Gooch, F.R.C.V.S.

R. J. Hickes, F.R.C.V.S.

W. J. Mulvey

F. T. G. Hobday, F.R.C.V.S., Major A.V.C. (T.F.)

G. Rees-Mogg, F.R.C.V.S., Vet.-Capt. 1st Life Gds.

nominated by R. Pringle

W. S. Mulvey, F.R.C.V.S., Major R.E. (T.F.)

W. Cargill Patrick, F.R.C.V.S.

The PRESIDENT: Under our new regulations, I think, perhaps, the best way to deal with the matter would be in the first place, to elect the examiner and afterwards the reserve examiner. We will now proceed to the election of an examiner in Class A—Anatomy.

Mr. SHARE-JONES: How do you mean to deal with Anatomy under the new regulations?

The PRESIDENT: In the same way as the others, only Class A will end in July, that is all. Class B examiners will then become the Anatomy examiners.

Sir JOHN M'FADYEAN: These examiners are elected to act only during July and December next?

The PRESIDENT: That is all.

Sir JOHN M'FADYEAN: And those in Class A—Anatomy, will be elected to examine in July next only.

Mr. SHARE-JONES: That is my point, so that if the Council so desire they might, after July, take one member of the Class A Board to act in Class B.

The PRESIDENT: I do not think you can do that at present. I think you must keep the election of Class A examiners quite separate from Class B. It will all be altered within twelve months from now.

Sir JOHN M'FADYEAN: As a matter of fact the course proposed by Mr. Share-Jones would contravene the Bye-law, which says that no examiner shall examine in two subjects. That is the principal reason why we must appoint examiners for Anatomy in Class A.

Mr. SHARE-JONES: That is for July only.

The PRESIDENT: There will be no examination in Anatomy in Class A after July, and therefore no contravention of the Bye-law.

Mr. SHARE-JONES: My point is this: The appointment of the Class B examiners will be for three years.

The PRESIDENT: No, only for one year. We are not electing the examiners for three years on the present occasion.

Mr. SHARE-JONES: I beg your pardon; I did not know you had decided that. That is all right.

Ballots were then taken for the election of the examiners and the reserve examiners, with the following results:—

Class A. Anatomy.

Mr. John Blakeway. Reserve: Mr. Cargill Patrick.

Chemistry and Elementary Physics.

Dr. Munro. Reserve: Mr. Somerville.

Biology.

An equal number of votes were recorded for Dr. Bottomley and Mr. Ainsworth-Davis; and the President gave his casting vote in favour of Dr. Bottomley as examiner, he being the senior.

Reserve: Mr. Ainsworth-Davis.

Class B. Anatomy.

Mr. Bowes. Reserve: Mr. Ison.

Histology.

Dr. Symes. Reserve: Dr. Thompson.

Stable Management.

Mr. Dawes. Reserve: Mr. W. S. Mulvey.

Class C. Pathology.

Mr. Reeks. Reserve: Dr. McWeeney.

Materia Medica.

Mr. Peddie. Reserve: Mr. Begg.

In this case also there was a tie, and the President gave his casting vote in favour of the senior examiner, Mr. Peddie.

Veterinary Hygiene,

Mr. Woods. Reserve: Mr. Taylor.

The President ruled that Mr. Mulvey, who had been nominated, was not eligible for election, as he had previously been elected reserve examiner in Class B., Stable Management.

Class D. Veterinary Medicine.

Mr. Bloye. Reserve: Mr. Almond.

Veterinary Surgery.

Mr. Hicks. Reserve: Mr. Hobday.

Seven ballots had to be taken before the respective appointments were made in Veterinary Surgery. In the first place the President ruled that Mr. Mulvey and Mr. Cargill Patrick were not eligible for election, as they had been elected reserve examiners in other Classes. In the first three ballots for the election of the examiner, Mr. Hickes, who headed the poll on all occasions, did not receive a majority vote of those present. The fourth ballot resulted in a tie between Mr. Hickes and Mr. Gooch, and the President gave his casting vote in favour of Mr. Hickes as the senior examiner. The fifth ballot, for the election of the reserve examiner, resulted in Capt. Rees-Mogg heading the poll, but not with a majority vote of those present, and a tie between Mr. Hobday and Mr. Gooch. A sixth ballot was then taken as between Mr. Hobday and Mr. Gooch, to decide which of them should be in the final ballot with Capt. Rees-Mogg, and resulted in Mr. Hobday's favour. The seventh and final ballot as between Mr. Hobday and Capt. Rees-Mogg resulted in the former being elected reserve examiner.

Fellowship Examiners.

The following gentlemen were nominations as examiners for the Fellowship Examination:—

Veterinary Medicine and Surgery.

J. Macqueen, F.R.C.V.S.

Veterinary Hygiene and Sanitary Science.

H. Taylor, F.R.C.V.S., nominated by J. Dunstan
W. Woods, F.R.C.V.S. W. J. Mulvey

Pathology and Bacteriology.

J. Malcolm, F.R.C.V.S., F.H.A.S.

Prof. Macqueen was unanimously elected examiner in Veterinary Medicine and Surgery, and Mr. Malcolm in Pathology and Bacteriology; and, as the result of a ballot, Mr. Woods was elected examiner in Veterinary Hygiene and Sanitary Science.

This concluded the business before the Council.

WESTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

[NATIONAL V.M.A. SOUTHERN BRANCH.]

The 33rd Annual General Meeting was held at the Royal Clarence Hotel, Exeter, on Thursday, 30th March. The President, Mr. Wm. Roach, of Exeter, occupied the Chair; other members present included Messrs. P. G. Bond, Plymouth; Percy Penhale, Barnstaple; R. E. L. Penhale, Torrington; Wm. Penhale, Holdsworth, and E. J. Thorburn, Crewkerne.

The minutes of the last meeting were read and confirmed.

Apologies for non-attendance were read from Messrs. Wm. Ascott (Hon. Sec.), W. H. Bloye, R. J. Collings, A. J. Down, E. Dunstan, J. Dunstan, W. T. Dunstan, G. H. Gibbings, F. T. Harvey, and S. J. Motton.

Army Veterinary Service. It was reported that very satisfactory arrangements had been made under which Mr. W. L. Richardson's practice, at Wadebridge, is

being carried on by Messrs. C. Crowhurst, F. T. Harvey and W. Langdon, neighbouring practitioners.

The following members of the Association (out of a total of 39) are now serving with His Majesty's forces:—Capt. Wm. Ascott, Bideford; Major F. P. Bennett, Paignton; Lieut. J. C. Collings, Plymouth; Capt. R. J. Collings, Exeter; Major C. H. Gollidge, Sherborne; Capt. A. S. Head, Helston; Capt. Hart, Lieut. S. J. Motton, Penzance; Capt. W. B. Nelder, Exeter; Capt. C. E. Perry, Bristol; Lieut. R. S. Pethick, Tiverton; Capt. W. H. Preston, Barnstaple; Lieut. W. L. Richardson, Wadebridge; Capt. A. G. Saunders, Taunton, and Capt. H. E. Whitmore, Langport.

The HON. TREASURER (Mr. Bond) presented the Annual report and balance-sheet, which was approved and adopted, on the motion of Mr. W. Penhale, seconded by Mr. R. E. L. Penhale.

ELECTION OF OFFICERS.

The retiring officers:—*President*, Mr. Wm. Roach; *Vice-Presidents*, Messrs. A. J. Down, R. J. Collings, C. C. Parsons and H. E. Whitmore; *Hon. Treasurer*, Mr. P. G. Bond, and *Hon. Secretary*, Mr. Wm. Ascott, were re-elected, on the motion of Mr. W. Penhale, seconded by Mr. Thorburn.

Mr. CHAS. E. TUCKER, of 7 Greville Street, Bideford, was appointed Secretary (*pro. tem.*).

It was resolved that the time and place of the next meeting be left in abeyance.

Sympathetic reference was made to the severe illness through which Mr. W. H. Bloye has just passed, and the Secretary was requested to convey to him the best wishes of all the members present for his speedy and complete restoration to health.

TUBERCULIN AND TUBERCULOSIS.

MR. P. G. BOND, M.R.C.V.S., Plymouth.

What dose is sufficient for a test, and will an extra or double dose of tuberculin cause an animal to react, whereas if the normal dose is injected it will not?

I was under the impression that where tuberculosis is present in ever so small a quantity and tuberculin is injected, as a result of the chemical decomposition taking place between the two substances heat is evolved, and this circulating in the blood stream causes the rise in temperature.

I ask the question because I have been requested by the intending purchaser of bulls for export, through his agent, to give to each bull a double dose.

I have done this on two occasions, in bulls weighing about one ton each. Ordinarily I should follow the instructions sent with the tuberculin and give the 4 c.c. (60 minims.) In each of these cases I injected 120 minims at the wish of the agent and with the consent of the owners. I will call these bulls A and B.

(A) The temperature before injection was 101.6 at 7 a.m. After injection, as follows:—

4 p.m.	7 p.m.	10 p.m.	7 a.m.
9th hour.	12th hour.	15th hour.	24th hour.
103.2	103.4	104.2	104.5

(B) Temperature before injection, average of three takings at intervals of several hours, 101.5.

After injection:—

4 p.m.	9th hour.	7 p.m.	12th hour.	10 p.m.	15th hour.
102.6		105.4		105.6	

Both bulls were apparently in the best of health, derived from sound stock from the most careful breeders, and both had been very successful in the show rings at Royal, County, and other shows. Both had been sold at a high price—subject to their passing the test. The owners were very much surprised; they were present to

assist me on each occasion, and I took the temperature myself. The fact of their reacting is a matter so serious that steps must be taken to combat the unlooked for results.

The syringes were sterilised by boiling the evening before use. I injected at 7 a.m. The skin at the point of insertion was washed with Carbolic acid solution. The tuberculin was had down the day before testing, and the bulls were kept in from the afternoon of the day prior, in large roomy houses; treated in the usual manner. There was no swelling at all at the point of insertion of the needle, at the junction of the neck and shoulders in the loose part of the skin. The whole of the dose was given.

How am I to explain this so as to satisfy owners? I have tested a good many, but it has not been until recently that I have been asked to give the double dose.

I quote from letters received:—

"I agree with you that a full test should be given, in fact I should use $1\frac{1}{2}$ or double strength."

"If you agree and the owner of bull is willing, I should give another dose of double strength at once." (This refers to two heifers previously tested and passed, but not by me. Each showed a good chart).

"I shall in all cases in the future employ the same V.S. on the understanding that he uses at least $1\frac{1}{2}$ strength."

"I should like a double dose test applied to insure typical decisive reaction, if any at all."

In my opinion, both bulls reacted as on the chart given; the purchaser has the right to refusal having been bought subject to passing the test.

In September last I tested a healthy looking cow nine years old. The chart was as follows:—

Average temperature at time of injection, 7 a.m., 100.8.

4 p.m.	7 p.m.	10 p.m.	7 a.m.
9th hour.	12th hour.	15th hour.	24th hour.
101.2	102.2	102.2	102.0

I gave a certificate that, in my opinion, a reaction to the test had not taken place. When tested in South Africa on arrival there, the cow reacted. I gave the cow here 4 c.c. This cow went with two others at the same time from two different farms, and while she reacted, the other two showed no suspicious rise in temperature. These were sent on October 15th. On October 29th, fourteen days later, five other cows were sent out, two from one farm, both reacted on the other side; two others from another farm, both passed through without suspicion. Another from a third farm also passed through without suspicion.

What we want to ascertain is the opinion of the profession whether a double strength injection will show a false reaction or not. The object of the double strength test is to surmount the possible fortifying of the animals by previous injections of tuberculin.

Mr. R. E. L. PENHALE: It appears to me that this agitation emanates from non-professional men, who have very little knowledge of the disease and the tuberculin test, whereas veterinary surgeons act under the highest authority of the profession. In my opinion the injection of a double dose would produce results contrary to expectation, and would nullify the true test.

Mr. WM. PENHALE: Our thanks are due to Mr. Bond for bringing this matter forward. It is a subject affecting many veterinary surgeons and one that should be satisfactorily cleared up. I test a large number of animals for export to South Africa, and always use the ordinary dose, as directed. Of course, I get a small percentage of reactions. The agent for whom I act insists on the use of Pasteur tuberculin.

BROKEN BACK.

MR. P. G. BOND, M.R.C.V.S., Plymouth.

Subject, a big gun waggon army mare, seven years old, 16.2 hands high, been in the service 16 months; rightly passed sound when purchased. A good worker, powerful, staunch, and without vice.

It was sent route marching near-side wheeler, had done the same kind of work for months. On turning a bend in a road in which there was a tramway it slipped on the metals and fell. Went down on hind quarters, spreading the legs; got up, and was lame and stiff behind. It was being ridden at the time of the slip.

On standing, was taken out of the team of four and sent back to camp, three miles: it walked there, being led by the soldier in charge: put into its stall, fed, and put straight, nothing seriously amiss was noticed.

Next morning, it was watered with the others, and returned to stables, the stiffness continuing. I was asked to see it on the afternoon of that day.

I found it at the end of the stables leaning against the end boards with its hind legs crossed over. On trying to move, it swayed for a time and then went down. With plenty of strength the mare was got up, and stood that night, but went down again in the morning.

I saw it again, and from the symptom diagnosed paralysis. It might have been azoturia, but the water was normal and no rise of temperature, or very little—101°F. It was insensible to the prick of a pin, and struggled with the fore feet. Destruction advised.

Post-mortem examination showed the 9th vertebra dorsal region completely smashed, broken in five pieces, with the spinous process separated. The singular feature was that the mare had previously had a fracture of the 8th vertebra dorsal portion—it was plain to be seen. How did the mare manage to walk to its stables the three miles and apparently show very little, if any, evidence of such a condition? The mare was attended, that is, led back by a man, a former driver of mill horses for years.

I am of opinion that these fractures of the spinal column are not infrequent, and probably account for the conditions known as "Jinked back," "Kidney droppers," "Bobbies," "Shiverers," "Stringhalt," possibly "Weavers" caused by pressure from abnormal bony growths on some portion of the spinal cord, not due to any abnormal condition of the spinal cord itself. As a rule there is no pain shown, the animals work well, are great feeders, and last for years.

I have never heard of any active possible cause of these ailments, and I have never proved a case to be hereditary—in blood stock it has always been due to an accident. The conditions are often seen. A pitch plaster put on with a chamois leather over the loins—the charge for the plaster should be made with pitch, wax and sulphur—and with a run at grass generally, in young stock especially, effects a cure. A horse, with any of the conditions mentioned is not sound, yet is capable of good work for years.

This army horse with the double fracture was reliable in its work, had never given any indication previously of having received an injury to the back, and was considered one of the best in the camp. Its death was very much regretted: but there was no alternative, judging from the post-mortem examination.

CHAS. E. TUCKER, Secretary *pro tem*.

VICTORIA VETERINARY BENEVOLENT FUND

The Quarterly Meeting of the Council of the V. V. B. Fund was held at 10, Red Lion Square, W.C., on Thursday, April 6th, at 5 o'clock.

There were present: Messrs. S. H. Slocock, President, in the chair, T. S. Price, R. C. Trigger, F. W. Garnett, A. E. Mettam, G. A. Banham, S. Stockman and F. L. Gooch, the latter acting as Secretary, *pro tem*.

The Minutes of the previous Quarterly Meeting were taken as read.

SECRETARY'S QUARTERLY REPORT.

This was read by Mr. Gooch.

"In presenting my Report I have again to apologise for my unavoidable absence. It is impossible for me to attend the Meeting, principally from the fact that it means absenting myself from home for one whole night.

I feel the time has arrived when the work is getting rather too much for me. I can easily do the home work, but the tie of attending the Council at the present time is too great. Perhaps it would be convenient to consider whether a younger man, nearer to London, could assist me in attending Council Meetings, one who also could have all the details to present to the Council in case of my absence. I feel sure that, working single-handed, and not in the happiest area in England at the present time, some more fortunate individual might assist.

I regret we were again unsuccessful in obtaining the election to the London Orphan School, of Lawrence B. Farr, in our effort in January. He secured 667 votes. I hope, with renewed efforts, we shall secure his election in June next.

I have received intimation that it is probable that Hilda Tait is likely to be removed from the London Orphan School, owing to the fact that her mother is re-marrying.

I regret to report the death of Mrs. Marshall, to whom on the last occasion a grant of ten shillings per week for six months was made. It appears that the two daughters have practically exhausted all their savings in the maintenance of their mother, and the expenses incurred during her illness. I therefore suggest that the grant previously made to Mrs. Marshall for six months should be continued to the daughters.

It is unfortunate that so many subscriptions are still unpaid. I hope, however, to be able to have sufficient funds to carry me on for another six months.

Many members are signing the Bankers' Order Forms, thus saving considerable expense and correspondence to the Fund and to themselves.

I am getting our Auditors to go through my books, and estimate my liabilities for the year, and probably some of our subscribers may read these notes, which may perhaps jog their memories. I deplore the expenditure of extra correspondence, postages, etc., which might be better employed.

I would remind the Council that the Annual Meeting of the Fund will be held immediately after the Annual General Meeting of the R.C.V.S., when the retiring members of the Council for the year are eligible for re-election, and the Annual Accounts will be presented.

I suggest that the grants to all the old recipients should be continued, as no further claim has been made during the past quarter.

I have just received the enclosed letter from Mr. Bullock, and feel assured the Council will instruct me to reply their cordial appreciation of Mr. Sturgess' kindness. A full acknowledgement will be sent as requested."

On the proposition of Mr. Trigger, seconded by Mr. Garnett, it was decided that the grant made to the late Mrs. Marshall be continued to the daughters for the six months, after which time the Secretary should make further enquiries.

It was proposed by Mr. Gooch, and seconded by the President, that a vote of thanks be accorded to Mr. Sturgess for his generous donation to the Fund. This was unanimously carried.

Sir Stewart Stockman proposed to try and arrange that one of his assistants help Mr. Shipley in his secretarial work for the time being. The Council expressed their appreciation of this kindness.

A vote of thanks concluded the business of the Meeting.

NEW SUBSCRIBERS, AND DONORS.

W. T. D. Broad, Marlborough	£1 1 0
C. F. Parsons, Cheltenham	1 1 0
Lieut. Percy, A.V.C. Larkfield, Athlone	10 6
Mrs. Stokoe, 263 High Road, Lee, S.E.	1 1 0
Lieut. J. H. Thomas, A.V.C.	1 1 0
	£4 14 6

Donations.

A few Veterinary Officers,	
per A. Whicher, Bexhill	£1 0 0
F. Bazley, Devizes, Wilts	1 1 0
Boltons Cinema, per N. Parr, Jan. to Mar.	6 3 11
Capt. O. Dixon, 2nd don.	5 0 0
Lathrop (America) Fund, per W. L. Little	33 2 6
Miss A. C. Messieux, 2nd don.	7 6
Nowell Parr, S. Kensington, re Cinema	2 0 0
Mrs. E. K., Brighton, Sussex	5 0
E. Alfred West, S. Kensington, re Cinema	1 18 2
C. G. Wilkinson, Newcastle-on-Tyne. Spl.	1 1 0
W. G. Sturgess and others, Ceylon, per Royal College of Veterinary Surgeons	9 5 10
	£61 4 11

Maternal Quality in the Mare.

Masculine and feminine are divided by sex, but within those lines are very different degrees of masculinity and femininity. There are males of the effeminate type and mares that look like geldings, some, even, that are staggy. The masculine and feminine are by no means constant in degree, and in the human family, where this matter has been more closely studied than is possible with animals, the mental differences have been found to be overstepped by either sex. Probably the French breeders insist more strongly on feminine quality in brood mares than those of any other country, but it is a point that cannot be overlooked. It is far more difficult to reconcile the great bulk and substance of the draughter with brood mare quality than with the lighter breeds.

There are brood mares in which the motherly instinct is somewhat latent and whose conformation and make-up tend more to beef than milk—draught mares of the very best type for the show-ring and for work, but they lack when it comes to motherhood. With such mares the foals lack the initial impulse that a good milker will give. In big studs this deficiency often is made good by artificial feeding, but with ordinary farm horses the foal is apt to be backward at weaning time. Such a foal may have learned to eat earlier than the others and it may have greater assimilative powers than a foal from a better-milking mother, but other things being equal it will not make as good a matured horse as a foal from a good milker. If breeding is to be carried on

with the highest results in view we must have brood mares that combine substance with good maternal qualities.

Disposition is an intangible asset, yet one of the very greatest importance. One mare will foal free, willing, docile workers, and another those which, though they may not be vicious, have no endearing dispositions. Day in and day out, granted that a horse can do the work, its disposition makes more for the mutual comfort of the driver and his team fellows than it is easy to calculate. With a well-assorted team of genial manners it is restful to drive, and work becomes a pleasure when it can be promptly and accurately performed. Breeding good horses is no haphazard calling. Until the desired qualities are inherent at least in the brood mares no intelligent effort promises any success, or need be undertaken.—*Breeders' Gazette*.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds:—

J. Y. Bogue, Capt. A.V.C.	£1	1	0
J. Caldwell, Spilsby, Lincs.	1	1	0
F. P. Carter, Bradford	1	1	0
H. W. Caton, Mile End Road, E.	1	1	0
J. B. Chadwick, Old Trafford, Manchester	1	1	0
R. J. Foreman, Tottenham, N.	1	1	0
A. B. Forsyth, Cannock, Staffs.	1	1	0
R. Herbert, Rochdale	1	1	0
H. B. Hiles, Worcester	1	1	0
B. A. Jarvis, Capt. A.V.C.	1	1	0
J. R. A. Jones, Gloucester	1	1	0
W. S. Lamont, Cookstown, Co. Tyrone	1	1	0
A. S. Leese, Capt. A.V.C.	2	2	0
H. G. Lepper, Aylesbury	1	1	0
W. E. Litt, Shrewsbury	1	1	0
W. G. Litt, Shrewsbury	1	1	0
A. O. McDowell, Gloucester	1	1	0
W. B. Nelder, Capt. A.V.C.	1	1	0
S. H. Nye, Bow Road, E.	1	1	0
J. O. Powley, Birmingham	1	1	0
W. W. Reekie, 556 Oxford Street, W.	1	1	0
H. E. Richardson, Hedon, E. Yorks	1	1	0
J. M. Richardson, Capt. A.V.C.	1	1	0
F. W. Robards, Dartford	1	1	0
A. E. Roberts, Bournemouth	1	1	0
A. Spicer, New Oxted	1	1	0
J. M. Stewart, Swansea	1	1	0
J. H. Taylor, Lieut. A.V.C.	1	1	0
J. Temple, Aberaman, nr. Aberdare	1	1	0
F. T. Trewin, Watford	1	1	0
J. Walker, Alton, Hants	1	1	0
E. W. Williams, Dolgelly, Merioneth	1	1	0
P. Wilson, Lanark	1	1	0
Amount previously acknowledged	133	4	0
	£168	18	0

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donations are reported:—

Dr. O. C. Bradley, Edinburgh	£1	1	0
H. C. Dibben, Major A.V.C.	5	5	0
H. J. Lowe, Lieut. A.V.C.	1	0	0
James Walker, Pretoria	2	0	0
J. H. Taylor, Lieut. A.V.C.	1	1	0
W. A. Pallin, Major A.V.C.	2	2	0
A. W. Shilston, Muktesar, India	2	2	0
E. J. Burndred, Lieut. A.V.C.	1	1	0
B. A. Jarvis, Capt. A.V.C.	1	1	0
Previously reported	124	2	9

Total £140 15 9

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, April 13.

REGULAR FORCES. ARMY VETERINARY CORPS.

The notification regarding Capts. T. Bone and R. Tindle in *Gazette* of Feb. 8 is cancelled.

Temp. Lieuts. to be temp. Capts.:—H. K. Roberts (Feb. 24); J. M. Brand (Mar. 24).

To be temp. Lieuts.:—H. F. Reynolds (March 27); L. B. Cole (Mar. 29).

April 14.

Temp. Lieuts. to be temp. Capts.:—C. E. Doyle, T. Bowhill (April 1).

To be temp. Lieuts.:—P. J. O'Brien (Mar. 30); C. Bland, E. P. A. Offord (April 3).

April 15.

To be temp. Lieut.:—J. McBirney (April 3).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

April 18.

Capt. J. Tagg is granted temp. rank of Major whilst commanding a Vet. Hospital (April 1).

Capt. W. S. Carless is granted temp. rank of Major whilst commanding a Vet. Hospital (April 1), instead of as previously notified.

The following casualties are reported:—

DIED—Major W. O. C. Dawson, Indian Civ. Vet. Dept.

Capt. T. Z. Woods, Canadian A.V.C.

Sergt. D. W. T. Gibson, 7706.

Pte. W. Baker, 3045.

Personal.

Mr. JOHN BROWN, F.R.C.V.S., Invergordon, who has been for the past twenty months along with the Government Commission for the purchase of horses in America, returned home last week. Mr. Brown looks none the worse of his long sojourn in America. His many friends in Easter and Wester Ross gave him a hearty welcome back again.—*The People's Journal*.

OBITUARY.

DAVID MORRISON, M.R.C.V.S., New Deer, Aberdeenshire. Graduated, Edin.: Dec., 1894.

Mr. Morrison died on April 11th. Aged 50.

ANDREW BRADLEY, Hilltown, Co. Down, Registered "Existing Practitioner." Died on April 3rd, aged 86.

WOODRUFF.—On Saturday, the 15th April, after a few days' illness, at the Homestead, Lyons Down Road, New Barnet, Margaret Adah, the beloved wife of Major H. A. Woodruff, of the Australian Forces, and beloved daughter of Mr. and Mrs. C. H. Cooper, Lyndale, Seymour Road, Finchley, aged 32.

CORRESPONDENCE.

THE TAX ON MOTOR LICENSES.

Sir,—The incidence of the new proposed Motor Licenses is likely to become a serious matter to country practitioners, who, owing to the wide areas many have to cover in order to make a decent living, are compelled to keep two cars. In my own case, though no assistant is kept, two cars are necessary, as it is false economy to have one car always on the road, thus lacking the attention to keep it in order. The licenses of these cars will now cost 36 guineas a year,

and I venture to think not only that there are hundreds of country vets. in like case, but also that, relative to incomes earned, it will be hard to cite any body of men so heavily hit by a single tax.

Our Council is composed chiefly of town practitioners to whom cars are not essential, but I suspect that were it otherwise they as a body would have shown more energy in pressing our case to be placed on the same basis as the sister profession in this matter. According to *The Times* report of the debate in the House when the rebate on petrol was granted to us, and also on the personal authority to me of an under Secretary of State who was present on that occasion, not one word was said by the speakers on our behalf regarding the licenses. And yet Mr. John Holland, who had been publicly thanked for his energetic work in the matter, wrote you on Jan 10th last announcing that we were now entitled to a rebate of half the licence. Someone had blundered badly when the leaders of the propaganda did not know what results had followed their efforts.

However, the granting of the rebate on petrol was accomplished, and that is now our strongest weapon in the much more important matter in hand, for by granting it the Government concede the principle that the same reasons exist in our case for the concession as in that of the doctors; and when the principle is established, equality of concession must logically follow.

Another equally forcible argument, if needed, is, that veterinary surgeons in order to make a living require a much wider area of practice, and consequently have much longer journeys, than doctors.

I must apologise for the length of this epistle, but would urge our Council to bestir in this matter, which involves

not only real monetary hardship to a large number of members, but also constitutes a crucial test in our endeavour to be recognised as of the same status as medical men.

Yours faithfully,

Mold, April 17th.

"VIS UNITA FORTIOR."

Sir,—I have just learned from a reliable source that the medical profession is moving to obtain complete exemption from motor tax on the ground that cost of running a motor exceeds the salary which a dispensary doctor receives, and that the authority already approached on the subject has given encouragement as to the reasonableness of the request. Let this be a guide as to what the demand of the veterinary profession should be when the matter of motor tax will come up for discussion immediately after Easter. As with the dispensary patients, who are not now satisfied with the more slow attendance which the horse formerly afforded, so with our clients, and yet we are unable to extract an increased fee to cover the extra cost of the upkeep of a motor.

Surely we deserve some consideration, seeing that motor power and other circumstances have robbed us of our chief source of income. Our labour being, as a consequence, mostly confined to the preservation of the health of bovines, which are at present the principal asset of the farmer, and, indirectly, of the country at large, it should be the bounden duty of a fostering Government to afford us such succour as might help to arrest the continuance of that decrease in veterinary students which has been so marked during the last decade.—Yours truly,

Athy, 18th April.

JOHN HOLLAND.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended April 15	8	11			1	1	33	96	4	118	358
Corresponding week in											
1915 ...	19	20			2	2	‡56	‡152	1	84	548
1914 ...	14	15					44	67		109	1043
1913 ...	15	15			4	8	66	112		59	956
Total for 16 weeks, 1916 ...	207	238	1	24	21	60	1142	2789	161	1407	4365
Corresponding period in											
1915 ...	255	285			11	16	‡161	‡380	138	1181	5098
1914 ...	292	312	11	74	30	75	1066	1942	139	1036	9829
1913 ...	215	232			54	178	1193	2485	110	605	7889

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, April 18, 1916

† Counties affected, animals attacked :—Stafford 1. Excluding outbreaks in army horses.

IRELAND.	Week ended April 15	Outbreaks						6	6	57
				
Corresponding Week in										
1915	2	7	9	15
1914	3	5	32
1913	2	8	6	14
Total for 16 weeks, 1916	...	1	5	...	...	...	28	196	91	480
Corresponding period in										
1915	1	1	...	...	1	3	15	209	480
1914	64	812	...	...	37	308	389
1913	77	238	259

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, April 17, 1916.
NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1451.

APRIL 29, 1916.

VOL. XXVIII.

H.M. TREASURY AND A LONG-SERVICE PENSION.

On another page we print portions of a statement and several letters concerning the reduced pension and allowance of Mr. H. T. Ashbee. The arguments are set out in the letter from the R.C.V.S., and the facts are given in the supplementary letters: the whole has been reprinted, and is issued by the North of Ireland V.M.A.

The crux of the question lies in the difference in terms between a letter from the Privy Council Office, Dublin (No. 6545) dated 18th Nov. 1873, and a Treasury minute (No. 18,950/04) date not given, but presumably 1905. This latter document confers the right of a pension from that time ostensibly in exchange for the right of private practice, but this right Mr. Ashbee—and some others—had relinquished under terms of his appointment in 1873, and certainly had never exercised.

Now 1873 to 1905 is 32 years—time enough for a good many changes in officials; and the terms of Mr. Ashbee's appointment as Inspector in 1873—(then a temporary appointment, but permanent since 1878) made by the Privy Council Office at Dublin Castle, were probably unknown to the Treasury Officials in 1905, although there is evidence that the fact that he had not so practised was known to them. Is it then to be understood that under cover of this miserable quibble H.M. Treasury desires to filch from a Veterinary Officer who had grown old in the service the justly earned fruits of years of his work rather than own up to an oversight on the part of some of their officials?

If this is so, we can only agree with the resolution passed by the Veterinary Staff, D.A.T.I., that "unless this award is amended, it will have the most discouraging effect upon the staff, and must necessarily turn away from the service the more eligible of available candidates."

And we doubt if any Veterinary Department in the world under equal conditions can show a cleaner sheet in the matter of contagious disease than that of the Department for Ireland for some years past.

ACTIVE IMMUNIZATION OF CALVES IN UTERO AGAINST WHITE SCOUR.

Every practitioner knows what little value can be attached to drug therapy in the treatment of a virulent outbreak of white scour (so called) in calves. Prophylactic sanitary measures do reduce the maximum range of fatalities but still leave much to be desired. *Active immunization* by vaccines injected into the young calf is, for various reasons, impracticable. *Passive immunization* by the use of a polyvalent hyper-immune serum bids fair to give better results, and in practice one finds this is really so. In point of fact I may add I have robbed several outbreaks of their normally high casualties by the early use of a serum as prepared by Messrs. Parke, Davis & Co. It must be pointed out, however, that serum therapy here has its limitations, for unless the immune bodies contained in the sera carry specificity in their control over the toxic bodies elaborated through the activities of the causal organism or organisms no immunization will follow, and consequently no benefit to the patient result, while the serum may be condemned for failing to do that which it was never intended—namely—*unlimited* immunization.

Another method of immunizing the calf is through the maternal blood, and considering the close proximity of the latter with the foetal blood one cannot wonder that, given a high degree of immunity in the mother while pregnant, a certain standard will be reflected to the foetus.

In April of last year I was consulted by a client whose calves were dying from white scour in spite of all his efforts to save them. The history of the outbreak was a bad one, for he had lost 12 calves one after the other. The thirteenth was sent to my laboratory at 4 p.m. This calf was born at 6 a.m., and was noticed ill nine hours later. The symptoms in each case were characteristic of infectious white scour, the calves dying in from 18 to 36 hours after birth.

The calf submitted for examination was destroyed and opened with the usual precautions, and culture tubes inoculated from the heart blood, spleen, kidneys, liver, and gastric mucosæ, the surface of the latter having been well washed with sterile water. After 24 hours incubation pure cultures were obtained in all the tubes save those inoculated from the gastric mucosæ, which gave in addition another organism belonging to the *Proteus* flora.

Characteristics of the Causative Organism.

Microscopical. A short, thick bacillus, very motile, showing 1-2-6 flagella staining easily with the ordinary aniline dyes but not by Gram's.

Cultural. The bacillus grows aerobically. In broth the medium becomes cloudy throughout.

In gelatin stab the organism, at first transparent, becomes white, the medium does not liquify. Presence of gas noted.

On agar surface the colonies, at first translucent, become opaque and confluent. In milk the medium becomes acid and coagulates. A faecal odour is detected in each tube.

The organism was undoubtedly *Bacillus coli communis*, from which a vaccine was made and injected into the pregnant cows.

Cows immunized.

Cow No.	Due to calve.	
1	3 weeks	3 days.
2	6 "	3 "
3	6 "	5 "
4	7 "	4 "
5	8 "	—
6	9 "	3 "

Dosage. 1st injection 2,000,000,000, *sterile*.
2nd " 4,000,000,000, *attenuated*.
3rd " 4,000,000,000, *virulent*.

Each injection was given simultaneously over the scapular region. The first dose was made sterile by heat: the second was attenuated by trikvisol: and the third was an *active* bacterial emulsion. Each animal was injected once every seven days, and each carried her calf to full term.

Net result of the immunization. Cow No. 1 was delivered of a healthy calf which died in twenty-four hours after birth from typical white scour. The calf from cow No. 3 died from quarter-evil when 6 weeks and 4 days old. The remainder at the age of six months, when I made my last enquiry, were all alive and well. I may add that the only remedial measure adopted was, as soon as the calf was born it received 3ij medicinal paraffin.

Conclusions. One cannot, from experience gained from a single outbreak, dogmatise, however encouraging the results may be. Nevertheless, I record these results in the hope that others will follow.

Case No. 1 failed to respond successfully to the vaccination, but, paradoxical as it may seem at first sight, it is in reality a plea for vaccine therapy. Although the mother received the full quantum of vaccine, the time before delivery was too short for the full output of the artificially immunized mechanism to take place; and it is more than probable this was the cause of the failure. In any case, all the others which remain *in utero* a longer term after injection were apparently made immune. Finally, it must not be forgotten that the owner lost 12 calves one after the other, and it would be a most odd coincidence if at the very date we were consulted the outbreak had spent itself, and a natural immunity had been conferred upon the remaining pregnant cows. I may say that I purposely ordered all the cows to calve down in the same sheds as the others had done—in short, in an atmosphere of infection.

Bridgwater.

W. M. SCOTT, F.R.C.V.S.

ABSTRACTS FROM FOREIGN JOURNALS

EQUINE INFLUENZA IN THE WAR—PROPHYLAXIS AND METHODS OF TREATMENT.

In the second period of the Franco-Prussian campaign—that is to say, after the battle of the Marne—cases of equine influenza became more frequent in the German army. This disease, like other infectious maladies, such as strangles, had been relatively rare in the period of the advance, but became grave and diffused when trench warfare began. The horses of the French army, on the other hand, do not seem to have been affected by grave epizootics. From the few reports that are to hand, it appears that the most serious equine disease which invaded the French army was mange.

The German army was obliged, by the diffusion of these epizootics, to construct hospitals in the advanced zone of operations in order to render treatment possible and to accelerate it, and to limit the diffusion of contagion. The hospitals were prepared by preference in localities where there were some meadows. Stables were constructed; or, if existing stables were utilised, these were rendered airy by large windows and holes in the walls. When a hospital was constructed, the neighbouring army horses that were either affected with influenza or suspected of being so were brought to it.

The affected or suspected horses, on arrival at the hospital, were unshod and placed in full liberty in a large covered enclosure divided into sections, each section containing eight horses. Each enclosure was provided with water, forage, and oats sufficient to permit the horses to feed at will.

Treatment was instituted after the first examination, and was largely based upon the use of Salvarsan and neo-salvarsan. One of the veterinary officers attached to the hospitals reports in the *Berliner Tierärztliche Wochenschrift* that, in the case of horses which presented no symptoms of disease except a temperature of 102.2° F. and a slight reddening of the conjunctiva, it was thought superfluous to inject Salvarsan. Horses showing a temperature of over 104° F., loss of appetite, and an icteric tint of the conjunctiva were injected with Salvarsan the day after arrival; while, in horses showing very grave symptoms, the injections were made immediately.

The hospitals were supplied with both Salvarsan and Neo-salvarsan. The latter was naturally preferred, especially on account of the facility of preparing solutions.

The clear solutions were injected at body temperature into the jugular vein. The point of injection was chosen not too high; and an attempt was made to facilitate the insertion of the needle by holding the horse's head very high and inclining it to the right. The point of injection was previously shaved, and disinfected with tincture of iodine. The temperatures of all the horses were taken morning and evening, and a general examination was made at the same time.

The result of the treatment appears to have been extraordinary. In one hospital near Lille, only one horse died out of 120 which were treated with Salvarsan, and this one horse was already seriously ill when brought to the hospital. Using Salvarsan or Neo-salvarsan, the results were equally good. The animals lost their fever in from 48 to 72 hours; they showed a little depression and uncertainty of gait in the first days of treatment, and then improved rapidly so as to be out of all danger in from six to eight days. From that time forth, they lived all together in full liberty, and were able to leave the hospital after an average period of fifteen days.

At another hospital 184 horses were treated, 120 of them with Salvarsan, and all recovered except one.

Altogether, early treatment based upon Salvarsan has constituted the principal means in the cure and prophylaxis of influenza in the German army. Thus the military veterinarian, Erhardt, reports that towards the middle of January, 1915, influenza began to make itself felt, and its appearance awakened no little alarm among the veterinary surgeons. Fortunately, thanks to rapid intervention and treatment with Salvarsan, the epidemic had not a very considerable extension. Of 87 cases observed by this author up to towards the end of August, only two terminated in death, which, in one of the cases, was the consequence of a very severe myocarditis.

An attempt was made to avoid the diffusion of the malady as far as possible by taking temperatures daily, and immediately isolating all feverish horses. The course of the epidemic was not very severe; fifty-three cases of unilateral or bilateral croupous pneumonia occurred among the cases which were observed, while in the other cases either the bronchi alone were affected, or lobular pneumonia existed. Among the other morbid symptoms, icteric tinting of the conjunctiva, loss of appetite, fever between 104° F. and 106.5° F., cough, uncertain gait of the hind quarters, and, in some rare cases, a yellowish nasal discharge, deserve to be mentioned. Secondary affections were only observed in two cases, one of bilateral iritis and one inflammation of the sheaths of the tendons.

Such definitely favourable results are primarily attributable to treatment by Neo-salvarsan, by means of which the convalescence was abbreviated so far that the horses were never withdrawn from work for a longer period than three weeks. Under the influence of the treatment the horses lost their fever in a very short time (24 to 72 hours) and the pulmonary complications retroceded in from four to nine days.

Reimers, a Swiss veterinary surgeon, also reports that he has had very good results with the endovenous injection of Neo-salvarsan and the subcutaneous injection of Arsenolin, a product which is much less expensive than Salvarsan. Reimers has reported his own observations of two serious epidemics in influenza in the Friburg district. One occurred in 1904, when the Salvarsan treatment was not yet known. The other was soon after the

beginning of the present war, and was greatly accentuated by the requisitions of horses.

A comparison of the enormous losses caused by the first epidemic with those of the second yields a very convincing result. In 1904 influenza had a very high mortality. Many pregnant mares died of it, and the few that were saved from death aborted. There were also many complications and secondary infections. Since the introduction of treatment with Neo-salvarsan, matters changed radically. The author has treated 83 horses, 10 of which were pregnant mares of great value, with infusions of Neo-salvarsan. Only one case terminated in death, which occurred the day after administering the infusion. All the mares recovered, and all had completely normal parturitions. To sum up, the therapy with Salvarsan and Neo-salvarsan is proving itself reliable; and the treatment of influenza is now a field which offers satisfaction to the veterinarian. There is no reason to abandon this excellent method.

The results of the use of other arsenical preparations were less brilliant. Many civil veterinary surgeons, tempted by the low price, have tried Atoxyl, Plasmasil, and especially Arseno-solvin. The latter preparation is sold ready in solution, and should be heated before use; it is given subcutaneously. The results from it were not very favourable. The horses often became very restless after treatment; and, even when adopted in the first stages of the illness, the preparation sometimes proved inefficacious, so that owners refused to permit the same treatment in other affected animals.

In the Austrian army influenza is as much diffused as in the German one; but treatment with Salvarsan does not appear to have given the same results in the Austrian army as it has in the German. Other treatments have been tried; and some experiments in vaccine therapy by Szily and Bessko are reported. These workers, with an *anti-typhoid vaccine of human origin*, have initiated in veterinary medicine some experiments in para-specific bacterio-therapy, which has already been utilised in human medicine. The authors prepared their vaccine by cultivating Eberth's bacillus, directly isolated from human faeces, upon agar plates, emulsifying the culture in physiological solution, and adding 0.5% of carbolic acid. The vaccine contained 500 millions of germs to the cubic centimetre.

Fifteen horses were subjected to the vaccination, all with very evident effect. As in human typhoid—so in equine influenza, the vaccine has a brief rise of temperature as its first result, and then the temperature falls by lysis or by crisis. Generally the authors injected a dose of 5 c.c. into the veins, having observed that one of 10 c.c., as a first injection, gave an excessive result. The two following cases are quoted from the authors' report as illustrations of the results.

Case I. An eight-years-old horse, brought to the clinique on June 20, 1915, in a condition of adynamia. The temperature was 107.6° F., the pulse 66 and filiform, and the respirations 45. The

gait was vacillating, the eyelids drooped and swollen, and the cornea dim. Cough, purulent nasal discharge, a dark red colour of the nasal mucous membranes, and loss of appetite were among the other symptoms present. At 8 a.m. 5 c.c. of the vaccine was injected endovenously. On June 23 auscultation of the lung yielded normal results, the general condition was considerably improved, and the horse ate oats eagerly. On June 24 the appetite and gait were normal, and the swelling had disappeared; and on the 26th the fever disappeared definitely.

Case II. An eight-years old mare, brought to the clinique on August 12. She was depressed and without appetite; the temperature was 103.4° F., the pulse 52, and the respirations 24. The conjunctivae were inflamed, and there was abundant lachrymation. Cough was frequent and painful, but no pulmonary alterations were discoverable. On August 16 auscultation revealed alterations in both lungs. The animal gradually became worse until August 23. An endovenous injection of 10 c.c. of vaccine was then given, after which the temperature rapidly rose to 107.2° F.; the animal fell and was seized with trembling, but rose in four or five minutes, exhibiting abundant sweating. Towards evening the temperature was 100.4° F., and there was general debility. On August 25 the temperature was 98.9° F., the respiration was improved, and the pulmonary complications were subsiding. On August 29 recovery was complete.

The results of this paraspecific bacterio-therapy therefore appear alluring. It is obvious, however, that this therapy would be more suitably applied by injecting those germs (*streptococci*, *b. paratyphoid*, *b. ovoid*) which are more or less constantly separated from the blood and viscera of animals affected with influenza. Probably these vaccines will be able to hinder the establishment or favour the resolution of the complications of influenza.—*(La Clinica Veterinaria).* W. R. C.

CENTRAL VETERINARY SOCIETY.

The monthly meeting was held at the Royal College of Veterinary Surgeons, 10 Red Lion Square, London, W.C., on Thursday evening, 6th April, Mr. W. R. DAVIS, President, occupying the Chair.

The following Fellows signed the attendance book: Messrs. N. Almond, J. B. Buxton, F. W. Chamberlain, R. J. Foreman, G. S. Heatley, W. S. King; Prof. J. Macqueen; Messrs. W. Norman, S. H. Slocock, Thompson, J. Willett; Prof. G. H. Wooldridge; and Mr. Hugh A. MacCormack, Hon. Sec. Visitors: Lieut. P. Connolly, A.V.C., Lieut. H. J. Reynolds, A.V.C., and Mr. B. S. Cockerton.

Minutes. On the motion of Mr. R. J. Foreman, seconded by Mr. J. Willett, the minutes of the last meeting were taken as read, and confirmed.

Correspondence. The Secretary announced that letters regretting inability to attend the meeting had been received from Colonel Rutherford, and Messrs. McIntosh, Stroud, and F. W. Willett.

CASES.

Mr. THOMPSON said he recently received an urgent message to attend a horse that was straining very badly.

On arriving, he found that the patient had inverted the rectum. The mass was about as big as a man's head, of a gelatinous appearance, with serum oozing from it. He attempted to return it, but was unable to do so, even after putting the horse under chloral hydrate and morphia. On exploring the bowel he found it was filled with harder dung than usual, and while removing it he felt something pricking his hand, and he then discovered a piece of fibre from a brush, about five inches long, which had penetrated the rectum in a downward and backward direction. After removing it he anointed the part with carbolic oil, and experienced little difficulty in getting it back. He gave the patient a dose of linseed oil, and he resumed work in about seven days time; no further trouble was experienced. Directly he removed the piece of fibre the horse staled a tremendous amount, and he wondered whether it had penetrated the bladder.

The PRESIDENT thought Mr. Thompson was to be congratulated on getting the rectum back so readily and finding the cause of the trouble, because very frequently, especially in mares, protrusion of the rectum was followed by death.

Mr. J. WILLETT mentioned an interesting case of a cat he recently saw whose lower jaw was supposed to have been fractured by coming in contact with a motor car. The lower lip and cheek were stripped completely down. He suggested that the cat should be destroyed, but as the owners were very fond of it and desired to save it, he put a suture in the hanging skin on each side, tying it to the canine teeth, and another suture in the centre of the lip which he brought right across the lower jaw. The case was interesting from the point of view that it healed from first intention, although there was very little flesh available. The wound was dressed with Iodex ointment. There was now just a little retraction of the lip on one side, the gum being shown, but not on the other.

The PRESIDENT mentioned the case of a horse which recently died from a calculus, and had exhibited a symptom that he had never seen before in horses dying from this cause, although it was quite common in dogs in obstruction of the bowel. It was not uncommon to find dogs that were constipated paralysed behind; and the horse in question was completely paralysed. He was not able to raise himself during the whole time of his illness, which lasted about twelve hours, although he strained violently and tried to get up. On making a post-mortem he found a large calculus in the colon. It would be interesting to know if any of the other Fellows had seen a horse in a condition of paralysis from impaction of the intestines or from a calculus.

In reply to Mr. Willett, the PRESIDENT stated that the horse, which was about ten years old, had been in the habit of lying down.

Mr. FOREMAN said he had not seen a case of paralysis from a calculus or impaction, but he had seen it several times where "corrugated gut" (enteritis) occurred, in which the walls of the large bowels were tremendously thickened. In those cases it had been impossible to get the horses on their legs, even with slings.

Mr. N. ALMOND thought the members would like to hear the sequel of the case in reference to a cow's udder which he brought before the last meeting. The Research Laboratory at first said it was due to diphtheria bacillus, but as a result of further investigation they came to a contrary conclusion. The udder was now perfectly well, and the secreting structures were at no time involved in the disturbance.

The PRESIDENT thought that was a very satisfactory conclusion to the case.

Election of Fellow. Mr. B. S. COCKERTON was balloted for, and unanimously elected a Fellow of the Society.

SIGNIFICANCE OF VOMITING
IN DOMESTICATED ANIMALS.

By W. R. DAVIS, M.R.C.V.S., Enfield.

[This appeared in our issue of April 22nd.]

DISCUSSION.

Mr. ALMOND said he had seen a good many cases of rupture of the stomach, especially in young animals, but in very few cases had he seen distinct vomiting associated with it. He had occasionally seen fluids passed by the nostril, but that was the exception rather than the rule. He had frequently seen so-called ejection of ingesta from the œsophagus in horses, associated with disease of the œsophagus, and frequently dilatation of the œsophagus where the ingesta accumulated at intervals. Sometimes cases had gone on for two or three weeks, and then the patient had an attack of obstruction in the œsophagus. The animal was kept on fluids only and eventually recovered, but the trouble recurred. The intervals usually got shorter, and eventually the animal had to be destroyed. Those were cases which he associated with constriction followed by dilatation of the œsophagus. The more common cause of so-called vomiting was choking, and in those cases recovery usually occurred within a few hours, frequently without treatment or with the administration of a little glycerine or oil. A number of such cases that he had seen occurred through animals coming in hungry and food being in the manger all ready for them, which was a very bad practice; they "savaged" it. The imperfectly masticated chaff and corn were conveyed into the œsophagus by drinking water and created so-called choking. Such cases might be expected to end in recovery if the animal was left alone, or a small quantity of some emollient was administered. He remembered many years ago a case in which an animal invariably blew large quantities of the ingesta, partially masticated, all over the box. The cause of the trouble was not diagnosed, but on post-mortem it was found that the last molar projected beyond the corresponding molar in the upper jaw, and had grown to such an extent that it penetrated the soft palate. If that had been diagnosed it might have been cut off, and the animal would probably have recovered.

The only cases in which he had seen vomiting in the ox were where the œsophagus was completely covered with papilloma on the mucous surface. Vomiting in the dog was one of the commonest of symptoms, which might occur in all gastric disturbances. Dogs in that condition were inclined to take a great deal of water and then throw it up. Some veterinary surgeons kept dogs in that condition short of water, but he did not think that was a good plan, it being better, in his opinion, to give them water in small quantities frequently. There was no doubt also that vomiting in the dog was a symptom of various disturbances of the uterus, and occasionally of obstruction in the alimentary tract.

Mr. J. WILLETT thought that all the members had seen cases of attempted vomiting in the horse, both following on ruptured stomach and also from impaction of the œsophagus from ingesta. It was easy to differentiate between the two conditions, when accompanied by the running-down pulse and cold sweats always seen in ruptured stomach. He thought very often the stomach was ruptured by the improper use of either eserine or arecoline. The latest case of vomiting or attempted vomiting which had come under his notice occurred that morning, when a horse, after being fed in the usual course at 7 o'clock, was two hours afterwards taken to the riding school, and ten minutes later he attempted to vomit. He had a good pulse, and did not show any other signs of distress than putting his feet down, and "eweing" his neck, and bringing up a lot of froth: after being given a

pint of linseed oil the animal brought it up again. He gave him an injection of morphia, and about an hour afterwards gave him another pint of oil, which he kept down, and showed no further symptoms.

With reference to Mr. Almond's remarks on vomition in the dog and the administration of water; in his experience if a dog vomited continually he had gastric trouble, and then followed a craving for water to drink, either clean or dirty. He always stopped that and substituted either barley or lithia water. The patient, when thirsty, would drink only a very small quantity of that at a time.

Mr. CHAMBERLAIN said that during the last year he had brought some thousands of horses across the Atlantic, but he had never seen one in anything like a vomiting position from sea-sickness. He had seen profuse salivation, dribbling from the nostrils, and a most dejected appearance on the part of the animal, but nothing like vomiting. In some cases the President had quoted, eserine apparently had a distinct emetic action. Was pilocarpine combined in that treatment?

The PRESIDENT said he did not know.

Mr. Chamberlain said, like Mr. Almond, he had seen a good many cases of ruptured stomach with no attempt at vomition at all. As a matter of fact, he had never seen a horse vomit or get into a posture in any way simulating vomiting, except when he had an obstruction in the œsophagus. Vomiting was classed as a distinct symptom of ruptured stomach, but it had never fallen to his lot to see such cases.

With regard to voluntary vomition in the dog, he saw a fox terrier bitch some years ago who, whenever she was suckling puppies, went into the house at meal time, had a good meal, went straight out to her puppies, protruded the forelegs and neck, and absolutely vomited for the puppies' benefit; the puppies used to swallow the vomit. Vomiting is a very prominent symptom in ordinary gastritis in the dog, but he had always noticed that a dog with simple gastritis would vomit much more freely than a dog whose stomach is intensely inflamed and in an ulcerated condition. He had never found vomiting a prominent symptom in Stuttgart disease. Mr. Willett had referred to vomition after ruptured stomach had occurred. Personally, it had always appeared to him much more feasible that the rupture of the stomach followed vomiting, or attempted vomiting, than that vomition followed ruptured stomach. It appeared to him that the attempted vomition succeeded in rupturing the stomach.

Prof. G. H. WOOLDRIDGE did not agree with the President that vomiting in the horse was not uncommon. In his opinion vomiting in horses was distinctly uncommon, if by that term was implied the spasmodic involuntary expulsion of ingesta from the stomach. In the whole list of cases the Author had given, only one conveyed any direct impression to him that it was probably a case of true vomiting in the horse, namely, the one recorded by Mr. Clunas. He agreed with Mr. Almond that in the vast majority of cases diagnosed, the so-called vomiting was due either to choking, or to some stricture of the œsophagus which might or might not have been associated with dilatation of the œsophagus. A common cause of the ejection of food material by the mouth and nostrils was spasm of the œsophagus, in which the material had probably been arrested in its passage to the stomach, and then, as the result of spasm, was forcibly ejected. He agreed also with Mr. Chamberlain in his deduction as to the sequence of events. He did not think there was any doubt that if a horse had an irritating condition of his stomach, in certain instances spasm of the stomach occurred, giving rise to symptoms corresponding with retching, and as a result rupture of the stomach might occur. But if a rupture had once taken place, he joined issue with anybody who suggested that vomiting would

follow. It was an obvious truism that any substance under pressure would escape, if possible, in the line of least resistance. The condition of the oesophageal opening into the stomach was such that it was almost absolutely impossible to get anything, even air, through it, except with the greatest difficulty, so that in his opinion in some of the cases mentioned the card had been put before the horse, the ruptured stomach having followed, in the majority of cases, futile attempts at vomiting. In a number of the cases quoted the post-mortems clearly showed dilatation of the oesophagus and pouched oesophagus, so that he was still unconvinced that vomiting in the horse was anything but a most rare and uncommon condition. He did not go so far as to say it was absolutely impossible, because one of the cases quoted seemed to convey that it might happen.

He did not quite understand whether the Author actually attempted to discriminate between spewing of the cud and vomition in the cow. Personally, it seemed to him it was one and the same thing in the vast majority of cases, but not in every case, because, even as the result of ordinary rumination, in some instances where lesion of the mouth or teeth was associated with some amount of pain, the actual cud dropped from the mouth. It more corresponded in that instance to quidding in the horse, but apart from that he thought cases of true vomiting in the cow occurred. There was no doubt about it in the case recorded by Mr. Scott in which a huge number of apples were expelled by a particular cow.

No mention had been made by the Author of vomiting in the goat. In the goat that was one of the commonest symptoms of gastric derangement, without being a very serious condition. Young goats in particular ate all sorts of irritant materials, and it was quite common for them to open their mouths wide and retch and actually vomit. A dose of stimulant, followed later by a laxative, readily cured the trouble.

The President had quoted many cases of vomiting in the dog, and he was glad to note that he included in the list nephritis, because many dogs had been brought to him which were said to be suffering from gastritis, with which diagnosis he had not been able to agree, and he had been able to prove the existence of nephritis. Another common cause was metritis in the bitch—not only the metritis which so often followed whelping, but also the chronic metritis that seemed to have been very common in bitches during the last two or three years. They did not vomit very constantly but perhaps two or three times a week, and a history of that kind assisted in arriving at a diagnosis. Another cause he found in a case in which Mr. Chamberlain was interested was duodenitis, a condition which was not often found at post-mortem examinations. In that particular instance no lesion could be found except an intense inflammation of the duodenum extending about 18 in. from the pylorus.

The significance of vomiting was a very big question indeed. Vomiting might be due, he thought, to two causes; firstly, an irritation of the pneumo-gastric area, and secondly, to nausea and the effect of absorption on the vomiting centre. In many instances vomiting in dogs occurred without any lesion of the alimentary tract at all; for instance, in cases of nephritis it appeared to be solely the result of nausea, and in the case of metritis also.

The question of treatment did not enter into the discussion, but along with Mr. Willett, he disagreed with Mr. Almond's allowance of water to dogs that were affected either with gastritis or repeated vomiting. A certain amount of water might be allowed, but at times it was certainly advantageous distinctly to curtail, if not altogether to prohibit, the supply of cold water. Other fluids could be used, which, however, the patients very frequently refused to take. The patients could be

given the necessary amount of food without setting up symptoms of vomiting, which caused so much exhaustion and interfered with their recovery.

Mr. THOMPSON said he had seen many cases of ruptured stomach in the horse, and as far as his experience went it was the exception rather than the rule that vomiting occurred in those cases; in fact, he could only call to mind one case in which vomiting occurred where the post-mortem showed a ruptured stomach. During his College days it was looked upon as a symptom of ruptured stomach. When he was a pupil he remembered a gipsy's horse being brought in; it was vomiting, and his Principal said very emphatically that it was suffering from a ruptured stomach. They tried, unsuccessfully, to give linseed oil, but after a while the vomiting became less severe and frequent; within three hours the horse was apparently all right. The horse vomited grass-green material. There was no dilatation of the oesophagus apparent, either in that case or in another one which he saw in his early days, which his Principal said was suffering from ruptured stomach, but which recovered. The ejection of fluid or semi-fluid from the nostril was very frequent for an hour or so and the spasms were very heavy. In another case, a mare vomited a lot of dried ash-leaves. She had been turned out in the autumn into a field where trees had been felled and the leaves were lying about in a half-dried condition, and she vomited a considerable amount of those half-masticated dried leaves. As in the other cases, the mare had a very accelerated, wiry pulse. She would not take oil, but she recovered in about three days. He agreed with previous speakers that in cases where attempts at vomiting occurred and a ruptured stomach was found, the vomition preceded the actual rupture. In the last ten years he had seen many cases of ruptured stomach, but only one in which one of the symptoms was vomiting.

The suggestion had been made that the trouble was due to grasping food put in the manger. He had charge in London of a thousand horses which came in every night, and for which food was ready in the manger, and he had never experienced any difficulty in that respect. He did not, however, agree with the practice. When a horse came in exhausted it ought to have a drink, and probably a little bit of hay to keep it quiet for a time, before having its corn, but owing to the difficulties connected with labour at the present time the food was put straight into the mangers for the horses to eat when they came in. Before doing so they had a drink at the trough. Cases of colic occurred, but no vomition or oesophageal trouble.

Prof. MACQUEEN said the title of the President's contribution was "The Significance of Vomition," but very little effort has been made to supply an answer to the question. First of all he thought it was necessary to be perfectly clear as to what was meant by vomition. The President stated that vomition was the forcible ejection of some of the contents of the stomach by way of the gullet. Probably most of us accepted that as a satisfactory definition of vomition, but in actual practice he thought it was doubtful if all cases in the horse of so-called vomition were really cases of forcible ejection of part of the contents of the stomach. There must be a certain amount of force exercised in all those efforts, but if they took as an illustration vomiting in man or in the dog—in both subjects it was easy and natural—then the definition of vomition in the horse as commonly observed was not strictly correct. There was a regurgitation of the semi-fluid contents of the stomach, sometimes regurgitation of solids from the gullet of the horse, but he very much doubted if it should be called vomiting. Cases of that sort were seen sometimes during the progress of an attack of purpura, in influenza, and sometimes in pneumonia, apart altogether from gastro-enteric disease; but he would not

like to commit himself to saying that a horse that ejected some of the contents of the stomach under those conditions was actually vomiting. The remark was made that in many cases the cause of the so-called vomition in the horse was oesophageal obstruction or dilatation, or at least the accumulation of ingesta in some portion of the gullet. That no doubt was perfectly true as far as it went, but there must come a time in all cases of gastric ejection of contents in which the material vomited did not exactly correspond with the material that had become arrested in the gullet. In watching a horse eject some of the contents of the stomach, the difference between material that had lodged some time in the stomach and material from the mouth that had lodged only a short time in the gullet would be noticed. At one time he held the view, expressed by several speakers, that true vomition in the horse always preceded gastric rupture, on the ground that if complete rupture of the stomach had taken place there was no possibility of the stomach ejecting its contents by way of the gullet. But on examining the question it was necessary to modify that view. The stomach was provided with three coats, the peritoneal, the muscular, and the mucous. Every rupture of the stomach did not involve all three coats simultaneously. There was such a thing as peritoneal rupture, and once that occurred the muscular and mucous coats passed through the rent, the effect of the dilatation being to remove the folds from the oesophageal opening and permit of the escape of the contents of the stomach by way of the gullet. In other cases no doubt the rupture involved not only the peritoneal but the muscular coat, and sometimes it was only the mucous membrane that formed a hernia through the rent in the wall. But even then the mucous folds that guarded the oesophageal opening were more or less dispersed, and there was every possibility of the contents of the stomach being forced upwards by abdominal pressure.

He held no very positive view regarding vomition in the horse. As in other things, he thought that if an open mind was kept one would be bound eventually to reach a stage when one would become more or less sceptical of all conclusions. He had lived long enough to have attained that condition of mind which led him quite willingly to listen to any feasible statement with regard to symptomatology. He did not deny that the horse vomited, but it did not often vomit, and where true vomiting occurred, *i.e.*, where there was a real attempt, he thought it was more likely to occur in connection with oesophageal trouble than with gastric trouble, and when the cause was due to gastric disturbance it was usually in connection with some breach in the wall of the stomach, *i.e.*, there was partial rupture or, failing that, some derangement of the wall of the stomach.

Regarding the significance of vomition in the horse, speaking comprehensively, and including the peculiar freaks or attempts at vomition that had been referred to, in his opinion the act was not specially significant of any condition other than disturbance of function, or some change in structure of the gullet or the stomach. The quantity of material ejected was not of very much importance. He certainly would not be inclined to accept a statement that a given horse with his nostrils soiled of a greenish colour must have vomited, because if the horse at the time was being fed on grass or other green food, and he was suffering from pharyngeal trouble, or even strangles, some of the food taken in might be returned by way of the nasal chambers, hence the soiling of the nostrils. In reading some of the reported cases one was bound to withhold acquiescence regarding the conclusion drawn by the reporters.

So far as vomiting in cattle was concerned, regurgitation was so common as to be considered natural. He had never met anyone who had seen a cow vomit.

Rumination might be thought to be a kind of vomition, but if that were so, the ox was a very well favoured animal. That was not the act, as he understood it, which could be described as vomition. There was always a certain amount of apparent pain associated with the act of vomition in the horse: and in cattle rumination, as commonly carried out by the animal, could hardly be considered as on the same plane as vomition. But in cowsheds, especially during winter and in certain places where cooked food was given, regurgitation from the rumen, presumably along the gullet into the mouth, was perfectly common. He would not call that vomition. The case reported by Mr. Scott of the ejection of so many apples might be a case of vomiting or it might be a case of disturbed rumination. There was nothing very remarkable about the ejection of a number of apples. Probably the animal was suffering from indigestion at the time.

He looked upon vomiting in the dog as quite a natural condition. It was an act of no difficulty, and probably saved the animal's life in many instances. The reason he referred to it at all was because Prof. Wooldridge and Mr. Almond said that they had seen cases connected with nephritis and metritis. He asked those gentlemen on what ground they based the statement that nephritis was a cause of vomiting in the dog. If nephritis was responsible for vomiting in the dog, what was the connection between the ejection of the contents of the stomach and the existence of the nephritis or metritis?

Mr. S. H. SLOCOCK agreed that true vomition in the horse was a very rare occurrence. He was particularly interested in Prof. Macqueen's remarks in regard to the connection of ruptured stomach with vomition, because one held strongly to old teaching. Most of those present were taught the connection between vomiting and ruptured stomach, and hardly liked to think that the experience of so many years was entirely wrong. Years ago he remembered seeing what he considered a particularly good case of vomition in a pony that had been out to grass. The pony worked all the day and slept out in the meadow at night, and it filled itself with the succulent autumn grass. While he was there the pony brought up two bucketfuls of grass and fluid—more than a peck at a time. He regarded that as a true case of vomition. But the cases he had heard recorded that evening appealed to him as cases of obstruction of the oesophagus, and different from true vomiting. He had seen cases of obstruction of the oesophagus many times in horses that were fed with dry food on the grass, the horse "savaged" his food and had the choking symptoms that were seen in the majority of cases. Why was it that in some cases of bowel obstruction in the horse it was absolutely impossible to get a drench down? Was it not possible to get a reverse peristalsis affecting the stomach and the oesophagus? It always seemed to him that was a very feasible thing, and if so might not that be a cause of vomiting in the horse?

He accepted Prof. Macqueen's statement that true vomition was a very rare thing in cattle and sheep. Vomition in the pig was very frequent; he had seen it many times associated with swine fever in young pigs. He had seldom seen it in the older ones. He looked upon vomition in the dog as an act carried out at will. It was well known that a good brood bitch vomited for her puppies. It was an act of nature. The good brood bitch vomited partially digested food on which the puppies thrived. Dog breeders looked upon a bitch that vomited regularly as a most valuable asset which they would not part with on any account. He also thought the cat was able to vomit at will. Certainly vomition in the cat was very frequent.

Prof. WOOLDRIDGE, in reply to Prof. Macqueen's question as to why he formed the opinion that dogs would vomit as the result of nephritis and metritis, said that in his opinion it was associated directly with nausea, and that nausea could be regarded only as a symptom. He was afraid it was largely a subjective and not an objective symptom, because nausea could not very often be diagnosed in our patients. In his opinion, in each of the two cases the effect produced was through the vomiting centre as the result of deleterious products in the blood stream itself. He did not regard either of them as a reflex action at all. In the case of nephritis he was of opinion that it occurred as the result of the non-excretion of various products which should have been excreted. In the case of metritis it was due, in his opinion, to the absorption of materials from the uterus which affected the vomiting centre. Another part of the question was why he was of opinion that nephritis would cause the trouble apart from that explanation. His answer was that, after having examined a very large number of cases of nephritis and of metritis in which vomiting had occurred periodically, and in which he had been unable to find any other origin of the vomiting, he had been driven to the conclusion, rightly or wrongly, that they were due to nephritis or metritis in the respective cases. He thought it was due solely to the effect of the deleterious substances on the vomiting centre itself. He had learned very much from the discussion that evening, particularly in regard to the remark made by Mr. Slocock, that bitches vomited for their puppies, a thing he had never heard before. He had heard of brood bitches vomiting and lapping it up themselves, and he had heard of the puppies eating it too, but it had never occurred to him that the vomiting was done intentionally on the part of the bitch for the benefit of the puppies. Dogs often vomited at will. If his own dog, a griffon, was allowed to run about and get excited soon after a meal he always vomited; but in that case it was involuntary.

Mr. CHAMBERLAIN thought that ruptured stomach in the horse was generally consequent upon abnormal flatulent distension of the organ. The duodenum leaves the stomach at such an extraordinary angle (it has been described as the "siphon-trap" of the duodenum) that in flatulent distension of the stomach the "back door" automatically closes. The cardiac orifice is already impossible for escape of gas, from its anatomical formation, the oblique way in which the oesophagus enters, and the peculiar disposition of the mucous folds and muscular fibres. It seemed to him that the only logical, if practicable, method of relief in the case of a distended stomach was the passage of a probang, but he had always regarded that as an absolute impossibility in the horse, although a prominent American veterinary surgeon informed him that he repeatedly passed a probang in horses in cases of flatulent colic, relief thereby being obtained. It would be interesting to know if any of the Fellows had ever passed a probang with success through the nostrils of a horse. In flatulent colic the gaseous distension is not always confined to the colon. The stomach is often similarly inflated and in risk of rupture from causes just stated.

Mr. HEATLEY, in moving the adjournment of the discussion to the next Meeting, mentioned a case he saw in which there was a great amount of flatulence and distension of the bowels present in a horse. He manipulated the oesophagus and found something hard halfway down. He discovered it was an apple, the owner of the horse being in the habit of giving the horse one every Sunday night. He administered a dose of olive oil, and the next morning the horse was quite well.

Prof. WOOLDRIDGE seconded the motion for the adjournment of the discussion, which was carried unanimously.

After a short discussion, it was resolved, on the motion of Mr. J. Willett, seconded by Mr. Buxton, that the subject of assisting the Royal College of Veterinary Surgeons financially by any practicable method should be placed on the agenda for discussion at the next meeting.

On the motion of Mr. Buxton, seconded by Prof. Wooldridge, a hearty vote of thanks was accorded to those Fellows who had brought forward communications; and the President having been thanked for his conduct in the Chair, the meeting terminated.

HUGH A. MACCORMACK, Hon. Sec.

H.M. TREASURY AND A LONG SERVICE PENSION.

The following is a selection from "Copies of Papers dealing with the Retiring Allowances awarded to Mr. H. T. ASHBEET, M.R.C.V.S., late Veterinary Inspector under the Veterinary Branch, D.A.T.I.," which have been reprinted and circulated by the North of Ireland V.M.A. The three letters omitted (on account of space) are of less importance, with the exception of a paragraph in one of them, which is quoted following the letter from Mr. Prentice.

Mr. HENRY T. ASHBEET, M.R.C.V.S., son of the late Captain J. B. Ashbee, 23rd Brigade Royal Artillery, spent his early life in India. On returning to England he entered the Royal Veterinary College, Edinburgh, and obtained his degree on the 18th April, 1873. In the following December he entered the service of the Veterinary Department of the Irish Privy Council and remained in that service up to the 10th April, 1915, when he was compulsorily retired, having reached the age limit (65 years of age).

In an official document under date 18/11/73, numbered 6545, and addressed to Mr. Ashbee, the following occurs: *I deem it desirable to inform you that the entire time of such Inspectors will be required to the exclusion of all other occupations, and during the whole of Mr. Ashbee's 42 years' service he has faithfully complied with that condition. Moreover, the duties imposed upon him by his superiors have always fully occupied his whole time and energies, and have most effectually prevented him from engaging in any other occupation from which he could possibly have derived any monetary advantage.*

For five years, i.e., from 1873 to 1878, the Veterinary Service was of a more or less temporary character, but as it had proved its utility, in the latter year it was placed on a permanent basis, and in view of the more permanent nature of their employment the salaries of all veterinary inspectors were reduced. (In Mr. Ashbee's case from £312 per annum to £264 per annum.) These salaries were then placed in the Parliamentary Vote; hitherto they had been paid out of funds granted for cattle disease purpose. In 1900 the Veterinary Department of the Privy Council was taken over by the Department of Agriculture and Technical Instruction, Ireland, and the Act establishing that department contains a clause which safeguards officers taken over in so far as salaries, emoluments, and tenure of office was concerned.

Although the veterinary service was placed upon a permanent basis in 1878, and the veterinary officers' salaries reduced, these officers were not given Civil Service certificates; hence, according to Civil Service regulations, they were not in a position to claim pension rights. This disability was not recognised for some time, but when fully understood memorials were addressed to the authorities on the subject, but it was not until 1905 that the Lords Commissioners of His

Majesty's Treasury agreed to grant pension rights to various officers. Certain members of the staff were named and invited to submit their names (if they elected to become pensionable) together with an undertaking to give up their rights to private practice. Some time prior to the Treasury offering pension rights, a return was called for from each inspector as to monies earned in private practice. A number of the inspectors had never engaged in private practice, and even had the opportunity presented itself the duties they had to carry out for the department entirely precluded any possibility of their being able to attend outside work. Although the Treasury were aware of the officers who had been able to carry on private practice and those who had not, they demanded from all an undertaking to give up the right, and, as this was considered to be a matter of form, those officers who never engaged in private practice, and who had not the slightest idea that they had the right to so engage, signed the undertaking.

On Mr. Ashbee's retirement the department submitted an application for the Award of Superannuation to the Lords Commissioners of His Majesty's Treasury, and under the Superannuation Act of 1909 their Lordships have made the following award:—£96 5s. per annum pension, and £277 4s. gratuity. Now, had Mr. Ashbee been granted pension and allowance in accordance with his full service the amount would have been about £175 per annum pension and £540 allowance.

In calculating the award the Treasury have given credit for 22 years service only, although 42 years have been served. As far as can be gathered, the first five years of his service have been ignored, then, of the following 26 years served and while not holding a Civil Service certificate, 13 years only are given credit for, because it is alleged that during those 26 years *he had the right to private practice*. The 13 years are added to the last 9 years service during which he has held a certificate, thus making 22 years in all.

Minute No. 6545/18/11/73, previously quoted, governed Mr. Ashbee's service, and entirely debarred him from engaging in private practice or other private work. The Treasury have been informed by the department that he has been so employed by them that he could not have engaged in any other work. Consequently, as matters stand a grave injustice would be done to Mr. Ashbee unless the Pension Award be amended and he is credited with his whole period of service. If this is not done then the department should award compensation for having deprived him of a right which the Treasury think he was entitled to. Probably the official Minute 6545/18/11/73 would clear the matter up satisfactorily in so far as the Lords Commissioners of the Treasury are concerned.

In reply quote the number of this letter and address—No. 6545.

Professor Ferguson, H.M.V.S.,

Veterinary Dept. of the Privy Council Office,
Dublin Castle. 18th November, 1873.

Sir,

In reference to your application of the 3rd inst. for an appointment as Inspector in Ireland under the Cattle Diseases Acts, I deem it advisable to inform you that the entire time of such Inspectors will be required to the exclusion of all other occupations; the pay of £1 1s. per diem to be allowed only for week days, although an Inspector is liable to be called on to act on Sundays; travelling expenses when incurred on inspection paid according to a certain rate, the engagement to be for three months certain, a month's notice after the lapse of that period on either side terminating the engagement; liable to be called on to do duty at any place or time—if necessary in the Office of the Department; for the duties will not be merely portal.

Should these conditions suit your views, I shall deem it my duty to submit your name to the Government as that of a candidate for their consideration. I requested a gentleman who lately left Dublin, to call on you on his arrival at Edinburgh and to state to you that it, perhaps, might be desirable for you to have an interview with me; but as I have not heard from him since he left here, or from you, and as I gave him no official authority to so communicate to you, perhaps he has forgotten the matter.—I am, Sir, Your obedient Servant,

HUGH FERGUSON.

H. Ashbee, Esq., M.R.C.V.S.,
10, Broughton Street, Edinburgh.

By THE LORD LIEUTENANT GENERAL AND GENERAL GOVERNOR OF IRELAND.

WHEREAS an Order, dated the 8th day of October, 1873 was made by the Lords Justices of Ireland by and with the advice of Her Majesty's Privy Council in Ireland, by virtue and in exercise of the powers vested in them by the Cattle Diseases Act (Ireland), 1866, and the Cattle Diseases (Ireland) Amendment Act, 1870, and of every other power in that behalf. Now His Excellency The Lord Lieutenant General and General Governor of Ireland, by virtue and in exercise of every power and authority vested in him by the said Acts, and of every other power and authority hereunto enabling him, does by this Warrant appoint

MR. HENRY ASHBEE

to be an Inspector for the purposes of and regulations of the said Order of the 8th day of October, 1873.

Dated at Dublin Castle this 29th day of November, 1873.

By His Excellency's Command.
(Signed) T. H. BURKE.

12th Aug., 1915.

RESOLUTION PASSED BY VETERINARY STAFF, D.A.T.I.:

"We, the Veterinary Officers serving under the Veterinary Branch of the Department of Agriculture and Technical Instruction for Ireland, view with the gravest concern the treatment meted out to our late professional confrère, Mr. Ashbee, in the matter of retiring allowance.

"We submit that the inadequacy of the award should be manifest to all those who are conversant with the enormous benefits that have been conferred on this country by the collective efforts of our staff (past and present). We hold that Mr. Henry T. Ashbee, M.R.C.V.S., having served as a continuous and whole-time officer from the inception of the Service in 1873, is, in our opinion, justly entitled to the most generous treatment it may be in the power of the Authorities to grant and in view of the many precedents in which the whole period of Officers' services have been awarded, we claim that a member of our profession ought not to be excluded from similar treatment. Moreover, unless the award is amended, we feel that it will have the most discouraging effect upon the staff, and must necessarily turn away from the service the more eligible of available candidates."

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND. (VETERINARY BRANCH.)

50 & 51 Upper Mount Street,
Dublin, 21st August, 1915.

Dear Mr. Ashbee,

As I think you are aware, the Department have made further representations to the Treasury in respect to your retiring allowances, and they quoted the cases of Messrs. May and Moore, Veterinary Inspectors of the

Board of Agriculture and Fisheries. A reply has now been received from the Treasury, in which their Lordships state: "It was part of the terms on which the officers in question were placed on the establishment that their previous temporary service should be reckoned for pension. It was an express condition, however, of Mr. Ashbee's establishment that no part of his previous service should be so reckoned, and he has, therefore, already received more favourable terms than he had any grounds for expecting."

I am sorry that the Department's efforts on your behalf have not been more successful.—Yours faithfully,
D. S. PRENTICE, Chief Inspector.

H. T. Ashbee, Esq., M.R.C.V.S.
Knockdene Park, Belfast.

The following paragraph occurs in Minute No. 18960/04:—

"As regards existing Inspectors their Lordships state that it must be clearly understood that if placed upon the establishment their previous service cannot count for pension as they have not hitherto been required to give their whole time to their official duties, and many of them have, in fact, practised on their own account."

ROYAL COLLEGE OF VETERINARY SURGEONS.
10 Red Lion Square, London, W.C.
October, 1915.

Sir,

It has come to the notice of the Council of the Royal College of Veterinary Surgeons that Mr. Henry T. Ashbee, M.R.C.V.S., a senior Veterinary Inspector under the Department of Agriculture and Technical Instruction for Ireland, having been compulsorily retired on account of age, after 42 years' whole time service, has been awarded a pension and allowance in respect of 22 years' service only.

The circumstances of the case have been fully considered by my Council, and I am directed to bring before the notice of His Majesty's Treasury the following points:—

1. Mr. Ashbee was appointed as a whole time officer in December, 1873, and was continuously employed as such until the date of his retirement in April, 1915. The accompanying copy of document No. 6545, being the letter from the Veterinary Department of the Privy Council Office, Dublin, under date 18th November, 1873, and containing the conditions of Mr. Ashbee's employment, distinctly shows that the entire time of such inspectors would be required to the exclusion of all other occupations.

2. It is true that in 1905, when the Lords Commissioners of His Majesty's Treasury agreed to grant pension rights to certain members of the veterinary staff of the Department of Agriculture and Technical Instruction for Ireland, these officers were required to give an undertaking that they would give up the right to private practice, and that Mr. Ashbee signed that undertaking. I am to point out, however, that Mr. Ashbee had as a matter of fact never engaged in private practice, and that his official duties precluded the possibility of his so doing, a fact which can easily be verified by the department.

3. It is understood that the reason for the Treasury requiring an undertaking that all rights to private practice should be relinquished, was that no man should receive a pension based on years of service during which he was also earning money from other sources. Mr. Ashbee has, however, in reality complied with the spirit of this requirement during the whole of the 42 years of his service.

4. My Council do not wish to contest the legality of the refusal of His Majesty's Treasury to award a pension based on more than 22 years' service, but they do earnestly urge that this decision appears to rest solely on the technical ground that the undertaking signed on the 26th September, 1905, is capable of bearing the interpretation that Mr. Ashbee enjoyed the right to private practice prior to that date. It is respectfully submitted that the undertaking should be interpreted as meaning that Mr. Ashbee was perfectly willing to reaffirm for the future what was true of the past, namely, that he neither had nor claimed to have any right to private practice.

5. It is pointed out that two Veterinary Officers of the Board of Agriculture and Fisheries, who had also given whole time service both before and after being placed on the establishment, have been granted pensions and allowances in respect of the whole period of their service, namely, Messrs. A. May, M.R.C.V.S., and J. W. T. Moore, F.R.C.V.S. The case of Mr. Ashbee is in reality identical with that of these gentlemen, the only difference being that he was required to give an undertaking in set terms in 1905 which suggests what is not the fact, that he *might* have engaged in private practice prior to that date.

6. My Council, therefore, beg most earnestly to appeal for generous treatment to be accorded to Mr. Ashbee. They venture to suggest that if the entire period of his 42 years' whole time service were taken integrally as counting for pension and allowance, it would be both just and equitable, in view of his long period of service, and the creditable way in which those services have always been carried out.

I am, Sir, Your obedient Servant,
F. W. GARNETT, President.

To the First Lord
His Majesty's Treasury.

TREASURY CHAMBERS,
28th Oct., 1915.

Sir,

I have laid before the Lords Commissioners of His Majesty's Treasury your letter of the 13th inst., relative to the amount of the pension and additional allowance awarded to Mr. Henry T. Ashbee, M.R.C.V.S., formerly a Senior Veterinary Inspector under the Department of Agriculture and Technical Instruction for Ireland.

In reply, I am directed to inform you that my Lords regret that they are unable to modify their decision in this case, which was arrived at in the exercise of their discretion under Section 3 of the Superannuation Act, 1887, and after careful consideration of all the circumstances.—I am, Sir, Your obedient Servant,

T. L. HEATH.

The President, R.C.V.S.,
10, Red Lion Square, London, W.C.

VICTORIA VETERINARY BENEVOLENT FUND.

Dear Sir,

May I ask you if you would please publish the enclosed, which should have been attached to my Quarterly Report of the Meeting of Council of the Victoria Veterinary Benevolent Fund. It is a copy of a communication received by Mr. Bullock, Secretary to the R.C.V.S., and forwarded to me. Thanking you in anticipation.—Sincerely yours,

WM. SHIPLEY.

Gt. Yarmouth, April 20th.

3rd March, 1916.

Sir,

I have the honour to forward herewith a bank draft for £21 17s. 7d., being donations from the veterinary

surgeons in Ceylon to the funds mentioned below. Please divide it accordingly and hand over the amount given to each fund to the respective secretaries, who might forward me a receipt through you.

I annex a statement of donations to each fund.

I am, Sir, your obedient servant,
(Sgd.) G. W. STURGESS,
Govt. Vety. Surg., Ceylon.

The Secretary R.C.V.S.,
10 Red Lion Square, London, W.C.

	Victoria V.B.F.	A.-F.-B. V. Relief.	A.V.C. Comforts.
Mr. G. W. Sturgess	£3 0 7	£3 0 7	£ 13 0
Mr. W. A. De Silva, J.P.	2 13 11	2 13 11	1 7 5
Messrs. Pate & Son	1 6 11	1 6 11	13 5
Messrs. S. W. Wallis & Co.	1 6 11	1 6 11	13 5
Mr. T. A. Pate	6 9	6 9	6 9
Mr. E. T. Hoole	4 0	2 8	—
Mr. Victor Hoole	6 9	—	—
	£9 5 10	£8 17 9	£3 14 0

The R.S.P.C.A. and the A.V.C.

At the Annual Meeting of the R.S.P.C.A. on Friday, 17th inst., the work accomplished by the Royal Society for the Prevention of Cruelty to Animals, in conjunction with the Army Veterinary Service at the front, was commented upon with gratification. Capt. E. G. Fairholme, Chief Secretary of the Society, who is at present fulfilling the duties of Deputy Assistant Director of Veterinary Services in France, paid a high tribute to the work of the Veterinary Corps. One of the lessons he had learned at the front was that the Army did not talk, but he thought he might tell them that 80 per cent. of the horses treated at the veterinary hospitals in France were cured and rendered fit for service again. One of the things which had excited the admiration of the French was the humane manner in which the British Army looked after its horses.

Colonel Sir Edward Ward, who presided, stated that up to date the Society had already spent nearly £60,000 in helping the humane and economic work of the Army Veterinary Corps, and they had just given the order, at the request of the Army Veterinary Service, to enlarge to twice its present size the veterinary hospital erected in France for the use of the Canadian Contingent.

During the year 1915 the R.S.P.C.A. Fund has provided the following gifts for the benefit of the horses of the British Expeditionary Force in France, and of the

Army in training at home:—Three complete buildings for veterinary hospitals for the accommodation of 3,250 horses at a total cost of £32,000; temporary shelters for 500 horses; 35 ordinary horse ambulances for overseas services, and 15 for home service; 20 corn crushers and chaff cutters, complete with petrol engines; two motor lorries; five motor horse ambulances; standing for Isolation Hospital; 46 humane killers for slaughtering horses; and thousands of loin cloths, rugs, surcingle, bandages, sheepskins, poultice and brushing boots, brushes, combs, lamps, hoof picks, etc., as well as clipping machines, tents, chains, sets of harness, and huge quantities of medicaments of all sorts required for immediate use in veterinary hospitals, camps and depots.

The Register R.C.V.S., 1916.

The Register for the current year was issued on Saturday, 8th inst.—later than usual, owing in some measure to abnormal conditions and in part also to difficulties with the old printing type, which would have been replaced several years ago but for the hanging up of the V.S. Act Amendment Bill.

This year there are no innovations to be noted, but there are differences in several particulars, and some new material. At page 86 will be found the revised regulations for the Fellowship Degree: these are now in operation. On the following page those for the Diploma in Veterinary State Medicine, which, we understand are in abeyance during the continuance of the war.

In the list of members, the names of those who have taken Temporary Commissions are indicated by a letter (C), and these are, some of them, of a later date than Jan 1. The number of names on this list is 3409—16 less than that of 1915. The number of Existing Practitioners shown (Register III) is 166: 10 less than last year. So that there is a shrinkage of 26 names of registered men.

In accordance with a resolution of the Council, the Examination papers of the past year are not included in the Register, but sets may be obtained from the Registrar, at the College. Naturally, the Army Veterinary Service lists show the greatest change, and have entailed constant work and watchfulness to bring them anywhere near correct to the time of going to press. Altogether, the work is quite up to the standard of those of recent years, and is a great advance in amount of information on those of earlier years.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended April 22	14	14				2	39	71	4	116	326
Corresponding week in											
1915	12	12					32	67	5	94	448
1914	23	25			3	4	30	48		129	1538
1913	19	19			5	15	50	113	2	85	1441
Total for 17 weeks, 1916	221	252	1	24	21	62	1181	2863	165	1523	4691
Corresponding period in											
1915	267	297			11	16	193	447	143	1275	5546
1914	315	337	11	74	33	79	1096	1990	139	1165	11367
1913	234	251			59	193	1243	2598	112	690	9330

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, April 25, 1916

† Counties affected, animals attacked:—York, West Riding 2.

Excluding outbreaks in army horses.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds:—

H. Buckingham, Norwich	£1	1	0
A. S. Ferguson, Lieut. A.V.C.	1	1	0
W. Grey, Ilford	1	1	0
P. J. Harris, Major A.V.C.	1	1	0
P. J. Hayes, Enniscorthy	1	1	0
T. D. Hughes, Woodstock	1	1	0
Lancashire Veterinary Medical Association	5	5	0
J. Latta, Ulverston	1	1	0
J. A. B. McGowan, Lt.-Col. A.V.C.	1	0	0
North of Ireland Vet. Medical Association:—			
H. Gibson, Cavan	1	1	0
J. E. Johnston, Belfast	1	1	0
J. A. Jordan, Belfast	1	1	0
J. Loughran, Auchnacloy	1	1	0
W. F. McConnell, Strabane	1	1	0
J. J. Ross, Belfast	1	1	0
A. Snodgrass, Strabane	1	1	0
S. R. Thompson, Belfast	1	1	0
R. B. Palmer, Capt. A.V.C.	1	1	0
R. E. L. Penhale, Torrington	1	1	0
R. L. Phillips, Loughborough	1	1	0
P. S. Sparling, Capt. A.V.C.	1	1	0
J. Storrar, Chester	1	1	0
J. Tainsh, Grimsby	1	1	0
F. B. O. Taylor, Stratford-on-Avon	1	1	0
H. Taylor, Haywards Heath	1	1	0
E. C. Webb, Major A.V.C.	1	1	0
E. F. Wood, Hooton, nr. Chester	1	1	0
Amount previously acknowledged	168	18	0
	£201	8	0

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donation is reported:—

J. J. Hilliard, Capt. A.V.C.	£1	0	0
Previously reported	140	15	9
Total	£141	15	9

OBITUARY.

PETER SALMON DOLLAR, M.R.C.V.S., 18 Gt. Cumberland Place, London, W.

Graduated, Lond.: May, 1861.

Mr. Peter Salmon Dollar died suddenly at his house in Great Cumberland Place, W., on Monday, 24th inst., after a short illness, at the age of 77. He was a well-known man in the London carriage-horse world.

It is over sixty years ago that Peter Dollar came to London from Scotland and joined his brother Thomas, who founded the well-known jobbing firm. After a time Peter entered the service of the late Mr. Joshua East, the founder of the firm of Messrs. East & Co., the large jobmasters, of Curzon Street, and it was not long before he became, in addition to chief veterinary surgeon, manager of the firm which had grown so that the horses were numbered by the thousand.

For twenty-one years Mr. Peter Dollar remained with East & Co., and when he was eventually bought out the news world rumour put the figure at from £100,000 to £200,000.

Mr. Peter Dollar then set up business, together with his two sons, in Oxford Street, close by the Marble Arch. He built up a large and successful business, but when motor cars came along he decided to give up, and for the past ten years has lived in retirement.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, April 19.

REGULAR FORCES. ARMY VETERINARY CORPS.

Capt. M. P. Walsh to be temp. Major whilst commndg. a Veterinary Hospital (March 14).

Temp. Lieuts. to be temp. Capts.:—J. D. Scott (Mar. 24); G. N. Tomlinson (Mar. 28); F. Richardson (April 1); J. Waddell (April 2); R. W. Hadfield (April 7).

April 25.

Temp. Lieut. C. G. Cunningham is dismissed the Service by sentence of a General Court-Martial (Mar. 12).

April 26.

To be temp. Lieuts.:—R. T. Wood, F. Marks, A. A. Comerford (April 10).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

April 20.

Lieut.-Col. A. S. Trydell (Major, retired pay, Ind. Civil Vet. Dept.) reverts to the temp. rank of Major on alteration in posting (Dec. 7).

The following casualty is reported in the N.Z. Force:—
DIED—Pte. P. Bosworth, 17/26.

Personal.

AUCHTERLONIE—HULME. On April 8th, at St. Luke's, Endon, Staffordshire, Capt. Lindsay Alexander Auchterlonie, A.V.C., to Catherine, only daughter of Thomas Hulme, Endon Bank, Endon.

BULLOCK—SALMOND. On Saturday, the 22nd April, at the Parish Church of the Mains and Strathmartine, by the Rev. R. Spenser Ritchie, Fred Bullock, London, to Janet Hendrie Lindsay Salmond, only child of Mr. and Mrs. William Lindsay Salmond, West Station, Dundee.

CORRESPONDENCE.**MILK FEVER (?) IN A EWE.**

Mr. Frank Cundell, of Marlborough Road, Swindon, has forwarded the following description of a case which he considers authentic. Will any of our readers supplement the information by records of similar cases? Assuming that the cause of the symptoms is adynamic, it is probable that other than bovines are similarly affected.

Bishopstone Manor, Shrivenham,

Berks, April 17th, 1916.

Dear Sir,—We should like your opinion on the following point. Have you ever known a case of "milk fever" in a ewe?

On Saturday last, at 7 a.m., our foreman and shepherd both reported that a cross-bred Lincoln-Cheviot

ewe, which lambled (with twin) on Tuesday, April 11th, was unwell on Saturday. The symptoms were as follows:—

(1) Giddiness, accompanied by repeated leaps in the air; (2) Finally collapsing at 4 p.m. The shepherd then hauled her from the pasture to a shed, intending to skin her. My brother and I then appeared on the scene, at which time the ewe was quite insensible.

The symptoms were so similar to those of a cow with milk fever (of which, as you are aware, we have on this farm very great experience), that we decided to inflate the udder.

After this the ewe was placed in a loose box, with her lambs, with a bundle of straw on either side of her to keep her in a natural position. The effect was noticeable inside of ten minutes, and at 9 p.m. (two hours after treatment) the ewe was on her legs, and the lamb sucking. The ewe and lambs are this evening (Monday) absolutely all right.

We may state that for the past 14 years we have lost from five to ten ewes a year, and in some cases more, which we attributed to the effect of poisonous plants, which the ewes had eaten from the hedgerows.

We shall esteem it a favour if you could offer us your opinion on this case, as it evidently means the saving of the lives of hundreds of sheep.—We are yours faithfully,
J. E. & E. WHATLEY.

Frank Cundell, Esq., M.R.C.V.S.

THE PETROL REBATE.

Dear Sir,—The statement in your Editorial of the 15th inst. that "the recently obtained rebate of 3d. in the gallon on motor spirit was directly due to the pressure brought to bear on the Chancellor, and the representations made to him by the College" should not be allowed to pass without some protest, because it is hardly true, and is certainly unfair to Mr. John Holland, Mr. O'Connor, M.P., and others, who at great personal inconvenience looked after this matter for us.

I have before me evidence which shows that the recent successful move was started by Mr. Holland in September last, at which time the attitude of the Royal College was to regard this question as a lost cause. However, owing to Mr. Holland's energy influence was worked up in Parliament and the Royal College was induced to take action, which led to victory. To credit this good result to the Royal College as you do, is not just. The credit is largely shared by our friends in Parliament, and the credit of initiating and pressing the appeal at the opportune moment rests entirely with Mr. Holland. J. H. NORRIS.
Dublin, April 14th.

[It was not suggested that the Council R.C.V.S. were the only agents in the movement. Public acknowledgement had already been made of outside action, but not of that of the Council.]

A DISSENTIENT.

Sir,—Allow me to call your attention to two inaccuracies in your Editorial last week. You say, "no opponent of the Bill has subscribed to the R.C.V.S. Fund." I sent a subscription on March 31st. You also say, "the profession almost unanimously," etc. There were and are hundreds who object to the Bill.

Now that the Council have, in a perfunctory way, acknowledged the expediency of appealing to the profession, and to which there is every hope of a hearty response, we trust to hear no more of the wretched confiscating and unjust measure; much law cost will be saved, and the Council can in the future levy a guinea tax per annum on all fresh students without an Act of Parliament.—Yours truly,
HENRY DYER.

Blackheath, April 20th.

[We accept Mr. Dyer's correction with thanks, and envy him his optimism.]

Veterinary Societies—Addresses.

BORDER COUNTIES V.M.S.

Pres: Mr. H. Barrow, M.R.C.V.S., Ireby, Carlisle
Hon. Sec: Mr. R. Craig Robinson, M.R.C.V.S., Carlisle
Meetings, Second Friday of Feb., June, and October

GLASGOW V.M.S.

Pres.
Hon. Sec. Mr. John S. Keane, 11 Falkland Mansions, Kelvinside

ROYAL VETERINARY COLLEGE V.M.A.

Pres. & Hon. Sec: Mr. B. Gorton, M.R.C.V.S., M.F.S.
Hon. Treas: Prof. E. F. Shave, F.R.C.V.S.

ASSOCIATION OF VETERINARY OFFICERS OF HEALTH

Pres: Mr. T. Douglas, M.R.C.V.S., Kilmarnock
Hon. Sec. & Treas. Mr. A. M. Trotter, M.R.C.V.S., Moore Street, Abattoir, Glasgow

NATIONAL ASSOCIATION OF VETERINARY INSPECTORS

Pres: Mr. J. Abson, F.R.C.V.S., Sheffield
Hon. Sec: Mr. Trevor Spencer, M.R.C.V.S., Kettering

MUNSTER VETERINARY INSPECTORS' ASSOCIATION

Pres: Mr. D. M. Barry, M.R.C.V.S., Mallow
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Pres: Mr. W. A. Taylor, F.R.C.V.S., Brick-st, Manchester
Hon. Sec: Mr. G. H. Locke, M.R.C.V.S., Grosvenor Street, Oxford-st., Manchester
Treas: Mr. J. B. Wolstenholme, F.R.C.V.S., Quay-street, Manchester

VICTORIA VETERINARY BENEVOLENT FUND.

Pres. Mr. S. H. Slocock, F.R.C.V.S., Montague Rd, Hounslow
Hon. Sec. & Treas: Mr. W. Shipley, F.R.C.V.S., South Town, Great Yarmouth

COLONIAL SOCIETIES.

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V. Pres: Maj. A. P. Gribben, P.V.O., M.R.C.V.S.
Hon. Sec. & Treas: Mr. Max. Henry, M.R.C.V.S., B.V.Sc. (SYD), 56 Bridge Street, Sydney

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Hon. Sec. & Treas. Mr. J. W. Crowhurst, F.R.C.V.S., Longmarket Street, Cape Town

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Pres. Mr. F. J. Carless, M.R.C.V.S., Mooli River
Hon. Sec. & Treas.

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71 Smithdown Lane, Liverpool*LANCASHIRE V.M.A.*
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Town Hall, Manchester
Hon. Treas: Mr. E. H. Stent, M.R.C.V.S., Preston-st, Hulme
Meetings, 1st Thursday in April, June, Sept., & Dec.*LIVERPOOL UNIVERSITY V.M.S.*
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Hon. Sec: Mr. A. Walker, F.R.C.V.S., Mill Lane, West Derby
Pathological Sec: Mr. D. C. Matheson, F.R.C.V.S.
Meetings, May, July, October, January.*MIDLAND COUNTIES V.M.A.*
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Hon. Sec: Mr. H. J. Dawes, F.R.C.V.S.,
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Hon. Treas. Mr. J. J. Burchall, M.R.C.V.S., Barrow-on-Soar
Meetings, Second Tuesday, Wednesday, Thursday, and
Friday alternately in Feb., May, Aug. and Nov.*NORTH OF ENGLAND V.M.A.*
Pres:
Hon. Sec: T. T. Jack, M.R.C.V.S., 8 Elmwood-st, Sunderland
Meetings, Third Friday, Feb., May, Aug. and Nov.*NORTH MIDLAND VETERINARY ASSOCIATION*
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Hon. Sec: Mr. J. S. Lloyd, F.R.C.V.S., Sheffield*NORTH WALES V.M.A.*
Pres: Mr. Hugh Williams, M.R.C.V.S., Ty Croes
Hon. Sec. Mr. L. W. Wynn Lloyd, M.R.C.V.S., Carnarvon
Meetings, First Tuesday, March and September*SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.*
Pres: Mr. J. M. Walker, F.R.C.V.S., Hartlepool
Hon. Sec. & Treas: Mr. F. H. Sanderson, M.R.C.V.S.,
Victoria Road, Darlington
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Hon. Sec: Mr. J. Clarkson, M.R.C.V.S., Garforth, nr. Leeds
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Kirkstall-road, Leeds**Southern Branch:***Pres.* Sir Stewart Stockman, 4 Whitehall Place, S.W.
Sec. T. C. Toope, 84 High Street, Dover
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Pres. Mr. W. R. Davis, M.R.C.V.S., Chase Side, Enfield
Hon. Sec: Mr. H. A. MacCormack, M.R.C.V.S.,
122 St. George's Avenue, Tufnell Park, N.
Meetings, First Thursday in each month, except August
and September, 10 Red Lion Square, Holborn, at 7 p.m.**EASTERN COUNTIES V.M.A.***Pres.* Mr. T. E. Barcham, M.R.C.V.S., Paston, Norfolk
Hon. Sec. & Treas: Mr. A. C. Holl, M.R.C.V.S., New Buckenham
Meetings, Second Tuesday, Feb., July and Sept.**LINCOLNSHIRE AND DISTRICT V.M.S.***Pres.* Mr. C. W. Townsend, F.R.C.V.S.,
Long Stanton, Cambridge
Hon. Sec. & Treas: Mr. Tom Hicks, M.R.C.V.S.,
Boston Road, Sleaford
Meetings, Second Thursday Feb., June, and October**ROYAL COUNTIES V.M.A.***Pres:* Mr. J. Willett, M.R.C.V.S., 6 Harley Place, N.W.
Hon. Sec. & Treas: Mr. G. P. Male, M.R.C.V.S., Reading
Meetings, Last Friday, Jan., April, July and Nov.**SOUTHERN COUNTIES V.S.***Pres:* Mr. G. H. Livesey, M.R.C.V.S., Hove, Sussex
Hon. Sec: Mr. J. T. Angwin, M.R.C.V.S., Arundel.
Hon. Treas: Mr. E. W. Baker, M.R.C.V.S., Wimborne
Meetings, Last Thursday, Mar., June and Sept.**SOUTH EASTERN V.A.***Pres.* Mr. E. Lyne Dixon, M.R.C.V.S., Margate
Hon. Sec. & Treas. Mr. Theo. C. Toope, M.R.C.V.S.,
84 High Street, Dover**WESTERN COUNTIES V.M.A.***Pres:* Mr. W. Roach, F.R.C.V.S., York Rd., Exeter
Hon. Sec. Mr. W. Ascott, M.R.C.V.S., (on Service, A.V.C.)
Mr. C. E. Tucker, M.R.C.V.S., 7 Greville St., Bideford (pro.tem.)
Hon. Treas: Mr. P. G. Bond, M.R.C.V.S., Plymouth
Meetings, Third Thursday, March, July and November**Irish Branch:***Pres.* Mr. A. Watson, Municipal Buildings, Dublin
Sec. Mr. P. D. Reavy, Leafield, Bundoran, Co. Donegal**CENTRAL V.A. OF IRELAND.***Pres:* Mr. B. P. J. Mahony, M.R.C.V.S., Maryborough
Hon. Sec. Mr. E. C. Winter, F.R.C.V.S., Queen-st., Limerick
Treas: Mr. J. F. Healy, M.R.C.V.S., Middleton**CONNAUGHT V.M.A.***Pres.* Mr. D. Hamilton, M.R.C.V.S., Ballina
Hon. Sec. & Treas. Mr. A. J. Moffett, M.R.C.V.S., Galway**VET. MED. ASSN. OF IRELAND.***Pres:* Mr. A. Watson, M.R.C.V.S., Dublin
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Hon. Treas: Prof. J. F. Craig, M.A., M.R.C.V.S.,
R.V. Coll., Dublin**NORTH OF IRELAND V.M.A.***Pres:* Mr. W. C. M. Smith, M.R.C.V.S., Newry
Hon. Sec: Mr. J. A. Jordan, M.R.C.V.S., Belfast
Hon. Treas: Mr. H. McConnell, M.R.C.V.S., Armagh**Scottish Branch:***Pres.* Dr. O. Charnock Bradley,
Ryl. (Dick) Vet. Coll: Edinburgh
Hon. Sec. Prof. A. Gofton, Municipal Buildings, Edin.
NORTH OF SCOTLAND V.M.S.
Pres: Mr. D. Cumming, M.R.C.V.S., Peterculter, Aberdeen-
shire
Hon. Sec. & Treas: Mr. G. Howie, M.R.C.V.S., Alford, Aberdeen
Meetings, Last Saturday in January and August**ROYAL SCOTTISH V.S.***Pres:* Mr. Reid, M.R.C.V.S., Auchtermuchty.**SCOTTISH METROPOLITAN V.M.S.***Pres:* Mr. J. Riddoch, M.R.C.V.S., Edinburgh
Hon. Sec. & Treas: Mr. Jas. Henderson, M.R.C.V.S.,
Public Health Dept., City Chambers, Edinburgh**WEST OF SCOTLAND V.M.A.***Pres:* Prof. John R. McCall, M.R.C.V.S., Vety. Coll. Glasgow
Hon. Sec: Mr. J. F. Macintyre, M.R.C.V.S.,
19 Bank Street, Hillhead, Glasgow
Hon. Treas: Mr. Geo. W. Weir, M.R.C.V.S.,
88 Crookston Street, Glasgow
Meetings, Second Wednesday, May, Oct. and January.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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SCHEDULED DISEASE.

We now have the Board of Agriculture's returns of scheduled disease for practically one-third of this year, and can compare the figures with those of the corresponding periods in previous years. The result can scarcely be called wholly satisfactory. One disease alone has declined—anthrax, which shows a fall of practically 20% from the same period last year, and a still larger one from 1914. Three other diseases—glanders, sheep scab, and swine fever—have increased upon last year, though in the case of the first two the increases are not alarming. The position of swine fever would be really disquieting if we failed to remember the unaccountable exacerbations which this disease often shows, one of which may well be in evidence now. Over 1600 outbreaks have occurred this year already—a great increase on both the 1915 and 1914 figures, and more than double those of 1913. It seems highly possible that the full year's total may exceed 4000 outbreaks, and perhaps do so considerably.

Parasitic mange is also very prevalent. As the Mange Order was suspended for the first three months of 1915, no useful comparison with last year's figures can yet be made. But this year, so far, we have had rather more outbreaks than in 1914, and not much fewer than in 1913.

We have had only one outbreak of foot-and-mouth disease this year; but the danger of its reappearance is ever present. Looking back over the whole period of the war, we think that the Board of Agriculture may fairly be congratulated upon the fact that this disease has not visited us more often. We could hardly have hoped for an absolute freedom from it; but we have enjoyed a comparative one—and we might have fallen very far short of that.

Probably the continued and augmenting effect of war conditions is the main cause of the general increase in scheduled disease. Numerical decrease in inspectors, lessened vigilance on the part of some owners, sales of army horses which often spread scheduled as well as unscheduled disease, are all factors working towards the same result. It is very probable that, while the war lasts, we shall continue to have more contagious disease in the country than we had two years ago; but there is nothing in the present figures to suggest that the increase is likely to be very serious. After the war, some new and very important questions in connection with animal disease will arise, and will throw a heavy responsibility upon the profession.

"RESEARCH" AND THE COLLEGES.

On p. 510 will be found portions of letters on this subject from a member of the East Lothian Horse Breeding Society and from Principal Bradley. That the suggestion is for the time impracticable is a foregone conclusion; but it is to be hoped that the attitude towards the College, and hence to the profession, is an earnest of the future. There have been investigations on at least two animal diseases carried out in Scotland, and work of a similar character at Cambridge in which veterinary men had no part. The history of the long delayed examination of stallions in Scotland is another evidence of the little appreciation of veterinary science in the north; yet in no part of the Kingdom is the work of individuals so freely recognised—as witness the valuable presentations and appreciative addresses to several private practitioners on leaving the districts in which they have practised. The persistent neglect of veterinary work by the State—in strong contrast to the policy of other governments—is reflected in the estimation in which it is held by that section of the community most widely interested. So far as we know, this present suggestion of the desirability of veterinary assistance is the first that has been made—outside the enlightened and continued support of the R.A.S.E.

VOMITION IN RUMINANTS.

In the discussion on Mr. Davis' paper on Vomition in Animals, Prof. Macqueen is reported as saying he had never met anyone who had seen a cow vomit. I think I have met cases which could hardly be called simple regurgitation.

A big Irish bullock, three years old, half-beef, was treated for "wooden tongue" with the usual iodine internally and externally. He apparently recovered, and was doing well and putting on flesh when the owner came to me, perhaps a month after, to say he had begun to vomit all he ate. What would happen was this—on getting his usual mangolds and cake he ate freely with the others in the fold, and filled himself quite naturally, then perhaps an hour after he would start vomiting and completely empty the rumen, until he looked like a greyhound; then he would be ready for his next feed. I told the owner it was his old complaint spread to the oesophagus, and advised slaughter if he could make £12 of him. However, the best bid was £3, and he came to me for more medicine rather than accept it. Instead of the usual 5 gr. doses I gave him

10 gr. Within the week he gradually improved, and within three months I watched him sold through the auction ring at £28—when beef was at its cheapest.

Some three years ago I was called to see some sheep. Four ewes were dead and eight or ten very ill. I suspected poison, and with the assistance of a botanist proved it to be hemlock. Three of those ewes vomited freely, and large quantities of it, and made good recoveries: two more died: the others tumbled about for several days before getting to their legs again, but they did recover.

Those that vomited, although very far through when I first saw them, were soon on their legs and all brain symptoms gone.

WM. A. CAMPBELL, M.R.C.V.S.

VOMITING IN THE HORSE.

Referring to the discussion on this disorder in the last *Veterinary Record*, I should like to relate an experience that I had.

On Feb. 28th last, I was called by a firm of railway carriers to a roan cart mare, ten years old, and in good condition. The animal was down, and had all symptoms of colic with vomiting; sitting on its haunches, running backwards, and in fact all the symptoms of trouble in the anterior part of the digestive tract.

I did not administer any drenches, but treated the mare hypodermically with morphia. I saw the animal again, three hours after it was taken bad, and came to the conclusion that it was a case of rupture of stomach and told owner so, and that animal would die. It was agreed to 'phone me to tell me when to see her opened, but as no 'phone message came, I called at stables on following day and found the mare feeding and recovered. She was put to work again three days after, and continued at work for four weeks, when the animal was taken ill again. I went to see her; found her showing all symptoms that she had on previous occasion: treatment adopted was the same as before.

The mare died eight hours after, and post-mortem revealed a rupture of the stomach. The rupture commenced 2 in. below œsophageal opening, and extended about 6 in. in a downward direction. There were no signs of old lesions in any of the coats of stomach. C. A. MALVISI.

COLIC—OBSCURE ORIGIN.*

The patient, an eight-year-old Shire bred mare, showed symptoms of colic whilst at work, on Monday, 25th April. She was sent home and a colic draught given which gave relief. Late that night she was again showing pain; the owner decided it was a case of indigestion, gave a six dram dose of physic: the following morning, there being no improvement, I was sent for early.

I found the mare showing colicky symptoms;

sweating profusely, pulse 50, full and hard, respirations 18, and temperature 101.2. I elicited that no action of the bowel had taken place since the preceding morning, and that urination was scanty. I explored the rectum but could find no impaction or displacement, and the bladder was empty.

I gave her per orem Linseed oil 1 pint, and subcutaneously Eserine sulph. 1 gr., Pilocarpine 1 gr., and a copious rectal injection of soapy water, and left the mare with instructions to give a draught which I left, composed of Chloral hydras. ziv . two hours later if the mare was still in pain. In the evening I again visited the mare. There had been no action of the bowel, the only action noticed was the characteristic one of the pilocarpine. Extensive salivation had lasted about half-an-hour. Symptoms of pain were less, pulse and respirations normal in tone and frequency, temperature 100.6.

Periodically for ten to fifteen minutes she would continually scrape the floor with the front feet, and turn her head toward the right side. Again explored rectum without result, and gave further injection: gave a further four drams of aloes, thinking perhaps only part of the ball had been given, although owner said he had seen it go. Informed him that I considered it a pure case of obstruction, and that relief would eventuate.

Wednesday: The mare remained in the same condition all day; periodic scrapings with both fore feet, no action of bowels, urination scanty and high-coloured. Administered another $1\frac{1}{2}$ pints of Linseed oil, and gave hypodermically $\frac{1}{2}$ grain Strychnia.

Thursday: No change. Membranes a little injected, pulse, respirations, and temperature normal. Pain shown less frequently. Gave more Strychnia.

Friday was a replica of the previous day. Mare had taken some bran mash and drank freely of water. Nux vomica substituted for the strychnia. More clysters given.

At midnight the mare was found to be sweating freely and in great pain, so the dose of chloral was at once given, which relieved it immediately.

On Saturday she appeared unchanged; the scraping symptom was still observed, but was less frequent: a small piece of mucous coated fæces had been evacuated with the enemata. I had come to the conclusion that a calculus was the probable cause and made another attempt to locate it, but without avail.

Lieut. BELL, A.V.C., suggested that the symptoms were very similar to those of Sand colic which he had recently met with in the service, and asked if such had been used.

Mr. Toope replied that none was to be obtained in his district.

Mr. HOGGEN suggested a dose of castor oil, believing the case to be one of obstinate constipation. He had found good effects after linseed had failed.

The sequelæ may be interesting: Sunday—Visited mare, found that another very severe attack had occurred during the night, so severe that the owner believed the mare to be dying. She was laid down fully stretched out, sweating profusely,

* At the meeting of the South Eastern V.M.A., at the County Hotel, Canterbury, on Saturday, 29th April.

and was with difficulty got up. Another dose of Chloral was given; subsequently flatus was passed freely and some small amount of faecal matter. When I saw her at 9.30, she had obtained complete relief; copious evacuations had occurred, she had commenced to feed, and drank freely.

I noticed that the evacuations had a peculiar appearance and were very gritty: then I learnt for the first time that the mare had been in the habit of picking up mouthfuls of soil whenever she had an opportunity when at plough. Needless to say, hereafter she will wear a muzzle.

So a diagnosis of Sand colic would have been near the mark after all.

THEO. C. TOOPE.

FRACTURE OF LEFT PARIETAL BONE (?) IN A DOG.

The subject of these notes is a well-bred collie. While out with his owner on a path by the railway line the dog got between the rails and was struck by a light engine travelling at a good speed. He was carried home, and left by his owner for the night in an outhouse.

Seen next morning by the writer, the following points were noted. There was a small incised wound, about $\frac{1}{2}$ in. long, in the sagittal direction, situated about $\frac{3}{4}$ in. behind the mid-point of the left frontal crest. Considerable swelling had occurred for about an inch all round this wound, which was dry and caked with mud. The patient was unconscious, with eyes open, corneal reflex absent and marked internal strabismus of both eyes. Opisthotonic spasms occurred at short intervals and there were almost continuous choreiform movements of the head. The dog frequently barked and moaned. There were rhythmic pawing movements of the left fore and hind limbs, while the right limbs were apparently paralysed, being motionless and atonic. The pulse was frequent and feeble, respirations accelerated, and the temperature 99° F.

The wound was cleaned and dried, and the hair in the immediate neighbourhood removed. Examination was rendered difficult by swelling, but no displacement of bone could be discovered. Fracture of the left parietal bone with sub-dural hæmorrhage was suspected.

Iodine ointment was applied to the wound and adjacent swollen area, and Morph. sulph. gr. i. given subcutaneously. Food was supplied by nutrient suppositories.

The same evening the spasmodic movements and the barking had ceased, and the respirations had slowed a little. The corneal reflex had returned but without further signs of consciousness.

Later that night the respirations became very shallow, and the temperature fell to 97.5° F. The femoral pulse was very frequent and almost imperceptible. It was also noted that in addition to the internal strabismus, the eyes had become extremely retracted, so that the closed eyelids were almost concave instead of convex.

Little hope of the animal's recovery was now

entertained. Three-quarters of a pint of 5% salt solution at about 103° F. was injected per rectum. Atropin. sulph., gr. 1/50th was given subcutaneously, and the animal well covered and left for the night.

Early next morning, to the writer's surprise, the patient was found conscious, with the eyes normal, pulse good, and the temperature 100° F. The paralysis of the right limb was partial; the animal could move them a little, but could not use them to support weight in trying to rise. He could lap milk with difficulty, but managed better with the head supported. On the following day the temperature had risen to normal. Pot. iod. (3 ss. per diem) was given for a week, followed by a course of arsenic and quinine.

At present, nearly five weeks from the date of injury, the only symptom remaining is an occasional choreic twitching of the head, which is slowly disappearing.

J. W. H.

ABSTRACTS FROM FOREIGN JOURNALS.

CANCEROUS TUMOUR OF THE PERICARDIUM AND ANTERIOR VENA CAVA IN THE HORSE.

Montazel has recorded the case of a mare which showed the following symptoms (*Rev. Vet. Milit.*). She was found one morning immovable, with the head low and the fore limbs separated in consequence of an enormous oedema of the breast, shoulder, and arms, which extended as far as the feet, lessening progressively from the knees downwards. The temperature was 102.4° F., and everything else was normal. The oedema augmented progressively, and in the following days involved the parotid, sublingual, and labial regions; the jugulars swelled, and the pulse was weak and rapid. The temperature rose to 103.1° F. Treatment was instituted; but the mare died, after undergoing various attacks of syncope, on the thirteenth day of the illness.

Post-mortem examination revealed, as the principal lesion, a very curious neoplasm of the external surface of the pericardium and of the right side of the heart. This neoplasm began very near the base of the sac, and was directed from below upwards; it involved the right ventricle, which it partly covered, and upon which it thickened and developed, completely englobing the anterior vena cava for a length of about four inches, starting from its point of origin.

This tumour was poorly supplied with vessels in its exposed inferior portion; but its swollen upper portion was nourished by a very rich network of vessels gorged with blood. It adhered very firmly to the pericardium, from the chorion of which it had originated.

The myocardium was pale and fragile, and the endocardium was healthy. The vena cava, in the portion involved by the tumour, was the seat of an intense phlebitis. The lumen of the vessel was partially obstructed by a large fibrinous clot, yellowish, undergoing organisation, and adherent to the vein. The internal tunic of the vein presented very numerous vegetations. The lymphatic vessels

which passed through the pericardium around the tumour were dilated and a little hard. The tracheo-bronchial and prepectoral glands, and those at the base of the heart, were slightly hypertrophied. From the macroscopic characters of the tumour and the results of the microscopical examination, the author concludes that it was an encephaloid carcinoma, which had undergone a lipomatous transformation at some points.—(*Rivista de Igiene y Sanidad Veterinaria*.)

INFECTIOUS ABORTION IN PIGS, AND SWINE FEVER

Dörrwächter has repeatedly had opportunities of observing considerable outbreaks of infectious abortion in swine. In one locality, half the pigs in it aborted. The time of abortion was the eighth to the twelfth week of gestation. Premonitory symptoms often appeared, in the form of vaginal swelling and discharge. Generally, after the abortion, an odourless grey-yellow vaginal discharge was visible; but this soon disappeared. Disturbance of the general condition was rare.

In addition to the form of abortion above described, Dörrwächter also observed, chiefly in the months of July and August, another running an especially malignant course, to which the pregnant sows fell victims almost without exception. The most striking feature of the affection was that this abortion, depending on an infectious endometritis, very often occurred together with swine fever; and there were establishments in which cases of pure swine fever occurred along with cases both of pure endometritis and those in which the two diseases co-existed.

The clinical symptoms indicated a severe general disease; and the chief local symptom was a considerable swelling of the vagina. Death occurred in from one to five days, and only about 20% of the affected animals survived the disease. Sometimes the course of the illness was so accelerated that the dead foetus was not expelled. In the sows which recovered, the foetus became macerated and remained in the uterus until slaughter, when their remains were found. Treatment was almost always without success.

The post-mortem appearances were those of an endometritis and septicaemia. Dörrwächter himself microscopically examined numerous preparations from the uterine wall, uterine mucous membrane and exudate, and could demonstrate small bacilli with bipolar staining. He was unable to decide whether these represented Bang's abortion bacillus, the bacillus suisepiteticus, the bacillus suispestifer, or some other organism.—(*Berliner Tier Woch*).

THE TREATMENT OF "KNEE TUMOURS" IN CATTLE.

A. Salvisberg, of Tavannes, has published a note upon this subject (*Schweizer Archiv. für Tierheilkunde*). He operates upon bovine "knee tumours" by opening them with a pointed knife, clearing away the fibrous mass, scraping the membrane formed in the interior with a curette, swabbing out the cavity with a piece of gauze soaked in a 50% solution of carbolic acid in spirit, and then drying.

He treats elbow tumours of the horse in the same way.

For quite large tumours, or small thick-walled ones, Salvisberg recommends the repeated rubbing in of "French fire." This is an old nostrum prepared by digesting 25 grammes each of powdered euphorbium and powdered cantharides in a mixture of 300 c.c. of olive oil and 200 c.c. of turpentine for a fortnight, and well shaking the mixture daily. Then, after allowing the mixture to stand till it becomes clear, its fluid portion is poured off. This vesicating agent is said to be far superior to cantharides preparations and other blisters.—(*Berliner Tier. Woch.*)

W. R. C.

SOUTH EASTERN VETERINARY ASSOCIATION.

(NATIONAL V.M.A.—SOUTHERN BRANCH).

A special informal meeting was held at the County Hotel, Canterbury, on Saturday, 29th April.

Present: Mr. E. L. DIXON, Margate, President; Messrs. Jas. Crowhurst, Canterbury; T. F. Hogben, Ash; E. Morgan, Faversham; T. C. Toope, Dover, Hon. Sec. Lieut. Bell, A.V.C., Brighouse, was present as a visitor.

The PRESIDENT, on opening the meeting, observed that it was nearly two years since they had met, a fact much to be regretted for many reasons, as undoubtedly these meetings did much good both professionally and socially. However, the present stress of circumstances and the absence of a large number of their members now engaged on military duties, if not entirely, to some extent, justified the conditions that had existed. Now, he hoped, we should again be able to resume our meetings, and he begged of those who could in any way spare the time to attend them regularly—he regarded it as a matter of duty for members who were not serving with the forces abroad to keep these institutions going as far as was possible.

They would remember that at their last meeting it was arranged that their next meeting should be held at Margate, when he had hoped to entertain those attending. He now further extended this invitation for a future occasion, and hoped at no distant date to have the honour of welcoming the members of this Association and their ladies there.

Mr. JAS. CROWHURST concurred with the President's remarks on the utility of these meetings, and hoped the good work begun would be continued, there was sufficient members left to carry on if they could be induced to attend, and there were many matters that required their attention at the present time in the profession. Personally, he thought it was advisable to call another meeting at an early date, when he hoped every effort would be made by members to attend.

The SECRETARY stated that possibly he was somewhat to blame in not calling a meeting earlier. He had mentioned the matter to several members he had met, and written to others last summer, but all agreed that as only a few members could attend, it was preferable to defer the matter for a time. His own enthusiasm had not diminished, but his time had been very fully taken up with government duties, lectures, etc., and he had been doing the work of a neighbouring practitioner who had gone to Canada on transport duty—beside his own private practice, so that if the work of the Society had been neglected to some extent, he felt it was somewhat excusable in the circumstances.

It was unanimously resolved that another meeting be

called forthwith, and that it should be held at Canterbury as the most convenient railway centre, on Saturday, 13th May, at 2.30 p.m., due notice to be sent to members as early as possible.

The SECRETARY stated that according to the rules all officers elected at the last annual meeting held were time-expired long since and needed re-electing, suggesting further this should be done *en bloc* until the end of the war, which he hoped would be over before another year.

Mr. MORGAN proposed this should be done, and it was resolved unanimously that such course should be taken.

Referring to the small numbers present, Mr. Toope said he had relied on advertisements in *The Record* and *The News*. He was in bed with influenza when the postal notices should have been in the hands of the printer, and when he was well enough to attend to it, the printing offices were closed for the Easter holidays. It was evident the advertisements had been unnoticed by many.

After discussing several matters in connection with Veterinary Inspection and other subjects, it was decided that these should be brought forward at the next meeting, as the gentlemen particularly interested were not present.

Mr. Toope related the history of an interesting case he had under treatment during the past week. (See p. 502)

THEO. C. TOOPE,
Hon. Sec. and Treasurer.

INVESTIGATIONS OF STRAINS OF TUBERCLE BACILLI DERIVED FROM SPUTUM. BY A. STANLEY GRIFFITH, MD., VICT. [Abridged.]

"I propose in this paper to summarise the whole of my observations upon the types of tubercle bacilli in the sputum of consumptives. The total number of strains of tubercle bacilli isolated by me from sputum is 212. Of these, 29 were investigated for the Royal Commission on Tuberculosis, 152 for the Grocers' Company, and the remainder (31) on behalf of the Medical Research Committee.

Thirty-one new strains of tubercle bacilli have been raised from sputum. The patients from whom sputum samples were derived varied in age from 17 to 53 years: 15 were under 25 and 3 were over 40. Of the patients 12 were females and 19 were males.

To ascertain whether or not a strain is capable of producing pigment on serum it is essential to use bovine serum, which is of yellow colour when coagulated. The serum I have used for subcultures has, during the greater part of my work at Cambridge, been obtained from a single animal, a Shorthorn cow, which is kept at the farm for the sole purpose of supplying serum. Different batches of serum from this cow have varied in colour, when coagulated, from pale yellow to golden yellow, but all have favoured the production of pigment. On a golden yellow serum the human type of tubercle bacillus produces a rich yellow, often orange-yellow pigment. With a less yellow serum the colour of the pigment varies from light cream to yellow. On a colourless serum, such as is usually obtained from the calf, pig, goat, or horse, the growths of human tubercle bacilli are greyish or greyish-white and are not pigmented. Standard bovine cultures have never in my experience produced bright yellow pigment, even on a golden yellow serum. Yellow pigment in a serum culture is therefore a character of considerable differential value.

Four Atypical Strains.

With the exception of the majority of strains derived from lupus and of a few mixed strains, all the strains

of tubercle bacilli of human origin upon which I have previously reported have been readily classified as either of bovine or of human type. This classification has been based on the characters of growth on artificial media and the virulence for certain species of animals, the rabbit being the standard test animal. The deviation from type observed in the majority of lupus tubercle bacilli has been in respect of virulence, the cultural characters of these strains having been those of either the human or the bovine type of tubercle bacillus.

During my work on tuberculosis in Cambridge I have obtained now and again from various kinds of human tuberculosis strains of tubercle bacilli which have displayed another kind of anomaly. These strains have exhibited standard (mammalian) virulence, but have not corresponded to either of the two mammalian types of tubercle bacilli in respect to their cultural characters. Of this new variety of tubercle bacillus I have obtained four strains from sputum.

[Clinical and cultural details are given of four pulmonary cases.]

On the clinical side the cases have not presented any unusual feature. With regard to the biological properties of the strains isolated, it must first be noted how in most particulars the strains resemble the human type of tubercle bacillus. All the strains have produced in the rabbit and the guinea-pig the pathogenic effects of standard human tubercle bacilli. They resemble human tubercle bacilli also in their mode of growth on serum and glycerine serum. Microscopically the strains exhibited very irregular morphology, and there were many long, curved, and beaded forms both in the sputum and in cultures. They differ from standard human tubercle bacilli only in the way they grow upon glycerine agar, potato, and broth. On these media they are dysgonic, and save for very minor differences on glycerine agar have displayed characters which would entitle them to classification with bovine tubercle bacilli. The cultural features of three of the strains were practically identical. The other strain produced moderately good growth on agar, not equal to that of standard human tubercle bacilli, but growths definitely dysgonic on potato and broth.

The growths on serum and glycerine serum of all the strains so closely resembled those of standard human tubercle bacilli that at first I was of the opinion that my failure to get similar characteristic growths on other media was due to faulty technique—i.e., to the use in the tests of not sufficiently vigorous subcultures, or to unfavourable media. The tests were therefore repeated again and again, but always with the same results. Two of the strains have been under observation for more than three years, and have been subcultivated on serum upwards of 60 times. Even after this prolonged subcultivation there has been manifested no increased capacity to grow on glycerine agar, potato, or broth. The same stability of cultural characters has been presented by each of the other strains after a period of observation of two and a half years. The distinctive cultural features of each strain have been retained also after subcultivation for several generations on glycerine serum and (of three strains) after passage through the bodies of animals, (rabbits and guinea-pigs). These strains appear therefore to be stable new varieties of the tubercle bacillus, and on account of their closer resemblance to the human than to the bovine type of organism I have provisionally classified them as atypical human tubercle bacilli. Since this paper was written Eastwood and F. Griffith have reported in the *Journal of Hygiene* (Vol. XV., No. 2, Jan. 14, 1916), the isolation of similar atypical strains from cases of bone and joint tuberculosis.

In order to ensure that samples of this class of strain are not overlooked, it is essential to use for testing pur-

poses not only a variety of glycerine media but also a serum which favours the production of pigment. The errors of classification which might have been made in these cases by a too restricted variety of culture tests are the following. If the serum used had been colourless or of poor quality distinctive (pigmented) growths would not have been secured, and the strains would have been classified as dysgonic with the pathogenicity of standard human tubercle bacilli. On the other hand, if the culture tests had been limited to egg and serum, with and without glycerine, the strains would not have been recognised as anomalous and would have been classified with standard human tubercle bacilli.

It is notable that of my series of 212 sputum examinations three only (1.4 per cent.) yielded tubercle bacilli of bovine type. Also that in each of these three cases, though the sputum was repeatedly tested, none but bacilli of the bovine type were on any occasion isolated. No other investigator in this country has cultivated from tuberculous sputum any but tubercle bacilli of human type, this result being recorded by Bulloch and Cobbett in regard to 23 and two cases respectively, and by Cruickshank in reference to an unspecified number of observations. This great preponderance in pulmonary tuberculosis of the human to the exclusion almost of the bovine tubercle bacillus is in striking contrast to the relative frequency with which bovine tubercle bacilli occur in surgical tuberculosis and in the tuberculosis of childhood.

In this country, therefore, pulmonary tuberculosis which has arrived at the ulcerative stage is but very rarely referable to tubercle bacilli of bovine type. And elsewhere than in Britain an even smaller proportion of the sputa of persons suffering from pulmonary tuberculosis has yielded bacilli of bovine type. Out of 736 cases tested by foreign investigators three only yielded bovine tubercle bacilli; and further, in two of these three the bovine bacillus was only sparsely mixed with preponderating bacilli of human type, while in the third case proof was not afforded (only a single examination of the sputum having been made) that in this instance also both types of tubercle bacillus were not coexistent in the lungs of the patient.

Method of obtaining Cultures of the Tubercle Bacillus by means of Antiformin.

This method, which has proved on more extended trial to be very trustworthy, was the outcome of the observation that the presence of free antiformin in a tuberculous fluid used for sowing cultures was not detrimental to the growth of the tubercle bacillus. There is no need, therefore, to centrifuge the bacilli and wash them free from antiformin before sowing. In fact, it is inadvisable in cultivation experiments to allow an antiformin sputum mixture to become so fluid that it is possible to centrifuge the bacilli.

Equal volumes of dilute antiformin (Antiformin, D.R.P., a mixture of sodium hydrate and Eau de Javelle), and sputum are pipetted with a wide-bore pipette into a small test-tube and thoroughly mixed. At intervals subsequently one loopful of the mixture is spread evenly over the surface of egg medium and the tubes are then incubated. By means of this simple procedure I obtained pure cultures of tubercle bacilli from 26 of the 31 new samples of sputum. In each experiment the volume of the sputum taken was about 1 c.c., and this was mixed with an equal volume of a 10 per cent. dilution of antiformin, thus forming a 5 per cent. antiformin sputum mixture. Egg tubes were sown with this mixture at intervals of 5 (sometimes 10) minutes during the first 30 minutes, the first tube being sown five minutes, occasionally 10 minutes, after the mixture was made. Tubes were also sown in many instances after longer intervals, up to 24 hours.

In all the 26 positive experiments the mixtures were free from living organisms other than tubercle bacilli in 20 minutes or less. In 12 experiments pure cultures of tubercle bacilli were obtained after the antiformin had acted for about 10 minutes, and in seven experiments after exposure for only five minutes. These experiments show how speedily organisms other than tubercle bacilli succumb to the action of antiformin. On the other hand, tubercle bacilli themselves did not long resist the action of five per cent. antiformin. In 13 experiments mixtures which yielded pure cultures of tubercle bacilli after 10 minutes' exposure to five per cent. antiformin were sterile after further periods of 5 or 10 minutes. The sputa in these cases were thin and mucinous, and in such sputa the resisting power of the tubercle bacillus is apparently little greater than that of the other microbes present.

It is evident from these results that with thin sputa the margin of time available during which pure cultures of tubercle bacilli are possible from a mixture may be very brief. When the sputum was thick the tubercle bacilli escaped early destruction, and such mixtures were found capable of producing cultures 24 hours after the sputum and antiformin were mixed. While five per cent. antiformin has given good results, so low a percentage has certain disadvantages for routine use. When the sputum is at all tenacious some time may elapse before organisms other than tubercle bacilli are destroyed and many may escape destruction altogether.

The work here reported on has been carried out in the Pathological Department of the Field Laboratories, University of Cambridge, on behalf of the Medical Research Committee.—*The Lancet*.

* * These strains have maintained their characteristics *in vitro* on given media. It is not possible to predicate what changes they might show *in vivo*, if passed through several human hosts. The hypothesis that T.B. was originally parasitic on vegetable organisms and was handed to man *via* the bovines would allow the possibility of intermediate and atypical strains.

Diet and Evolution.

The following excerpts are from one of a series of articles in *The Lancet*, entitled, "Food Economics in relation to the war," by Harry Campbell, M.D. LOND., F.R.C.P., LOND., Physician to the West End Hospital, London.

"Man is neither purely carnivorous nor purely vegetarian: he is a mixed feeder. Some contend that he is by nature purely vegetarian, and that a strict vegetarian diet is more conducive to health than a mixed, and a vegetarian enthusiast has recently suggested that the present would be a good time for the nation to exclude animal food altogether, on the ground that the food production of this country could be greatly increased if the farmer ceased to breed cattle, sheep, and pigs, and devoted himself exclusively to the cultivation of vegetable food—above all, of the cereals. We must be careful to avoid the sentimental error of supposing that man is by nature strictly vegetarian, no matter how anxious we may be to adopt a diet which does not involve the rearing of animals for slaughter. It was by virtue of persistent slaughter, continued through many thousands of centuries, that man evolved from the ape—that he grew into a being endowed with speech and reason and with aspirations beyond the grave. I have no doubt that it was the attraction of animal food which led the pre-human ape to abandon the forest for the plains, and that the conditions entailed by hunting were the chief factors in determining his evolution into man.

Other factors also operated. Intertribal warfare was, I believe, one of these, and I mention it here because it

bears upon a question of burning interest at the present time—the influence of warfare on evolution. All are agreed that whatever influence modern warfare may have in bracing up and stimulating a nation to meet difficulties, it has a disastrous effect eugenically, seeing that it causes an elimination of the physically fittest, and, in a country like our own, which adopts the voluntary system, of the bravest, most spirited, and most conscientious—in short, of those with the most grit. A strong argument by the way, against a strictly voluntary system. While modern warfare is a grave hindrance to evolution, I believe that primitive warfare played a not inconsiderable part in furthering it, notably in the psychic sphere, for it was a warfare of tribe against tribe, and its general effect was to cause a survival of the most brainy, most courageous, and most energetic tribes at the expense of their less gifted antagonists. This process continuing through many thousands of years, must have led to a steady evolution of the qualities which secured victory. This is a further illustration of my contention that man has evolved through slaughter. Strange, indeed, it is that he should have fought his way upward by bloodshed, and that from the standpoint of evolution modern warfare should have an effect the exact opposite of the old-time warfare of tribe against tribe.”

MILK IN DIETETICS.

“It is very generally but erroneously believed that the child, as distinguished from the babe, needs milk and would suffer greatly if the supply of dairy milk suddenly failed. As a matter of fact, dairy milk has injured children far more than it has profited them. Milk, affording as it does a peculiarly favourable soil for the growth of disease germs, has carried disease and death to hecatombs of children. Not only has it been the chief means of conveying tuberculosis, but it has acted injuriously by favouring the consumption of soft foods, such as sops and milk puddings. It goes without saying that the infant, like the young of other mammals, requires milk for the first period of its life, and that the proper milk for it is its own mother's. When this fails, as it sometimes does, mainly owing to unhealthy upbringing, we must, I suppose, gratefully acknowledge the service which non-human milk has rendered in enabling us to rear infants artificially. While, however, the infant needs milk of some kind during the first nine or ten months of life, it does *not need any after that period.*”

It is strange how the belief to the contrary has arisen. Why should the young of man any more than the young of any other mammal require milk after it has left the breast? It is only since man first domesticated the cow and the goat, and this from the point of view of his evolution was but as yesterday, that he has been supplied with any milk other than human, and it is absurd to suppose that before that time his health suffered from the lack of cow's or goat's milk. To this day many pre-agricultural tribes are without any. When Australia was discovered, and this was only a few hundred years ago, the natives had not cultivated one square foot of that great continent; their only domesticated animal was a half-wild dog, and not one of them had ever tasted any other milk than woman's. Nevertheless, they were a vigorous healthy race with magnificent teeth. I mention this latter fact because I have heard it seriously suggested that the lack of an adequate supply of dairy milk is the chief cause of bad teeth among the poor of this country.

My point is not that dairy milk is a useless food for man, but merely that it is not essential to him after the nursing period. Its chief value to the human race, so it seems to me, is as a source of butter and cheese, two

highly concentrated and agreeable foods, admitting of prolonged storage. For both these articles we are largely dependent upon foreign supplies. In 1913 we imported butter to the value of £24,000,000, and cheese to the value of £7,000,000. Would it not be wise, during the period of the war at least, to reduce our consumption of milk to a minimum and to make as much butter and cheese as possible, especially the latter, on account of the large amount of protein it contains?”

Loose talk about Tuberculin.

“From first to last the tuberculin test has been unreliable; it has cast suspicion on honourable men, led to the loss of valuable cattle, and lent itself to the discreditable devices of a small number of unscrupulous persons in this and in other countries, at the expense of the breeders, the exporters, and the cattle-breeding industry generally. Some prominent Northern breeders have for some years at their annual sales declined to sell subject to the test, and we do not think they have had any reason to regret the stand they so courageously made. If the action of the exporters already referred to leads to the rejection of the tuberculin test by the cattle breeders of the British Islands, it will have rendered a great service to the industry at home and abroad. Let the breed societies definitely decline to sell animals subject to the tuberculin test, and they will stamp out once and for all a system which has been tolerated far too long in this country, where we have the finest varieties of cattle and the healthiest herds in the world. Breeders have borne too patiently the exactions of this nostrum of science, falsely so called, and while no breeder will undervalue the findings of science and help that science has rendered and is rendering to the breeding and feeding of live stock, yet all these findings must be tested, not in the laboratory, where the tuberculin test may have some diagnostic value, but in the actual practice of his calling.

Tuberculin has sadly failed, and worse than failed, for it has made possible practices which are detested by honest men, and cast doubt and suspicion upon a class recently described to us by an American buyer, with thirty years' experience of trading with the cattle breeders in this and other countries, as “the finest men he had met in his travels, whose word was their bond.”

* * The foregoing occurs where one would not expect to find it—in the pages of *The Live Stock Journal*. It is misleading—if not mischievous. How would it have been possible to obtain, or maintain, tubercle-free herds without the use of tuberculin? And, in the opinion of those best qualified to understand, both tuberculin and mallein are held to be wellnigh infallible.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, April 27.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temp. Qmr. with hon. rank of Lieut.—T. E. Clarkson (April 21).

May 1.

To be temp. Qmr. with hon. rank of Lieut.—J. R. Devereux (April 21).

May 2.

Temp. Lieuts. to be temp. Capts.:—W. Tully-Christie, L. Herbert (April 13); R. Spittle (April 14).

Following Lieuts. relinquish comms. on termination of their engagements:—A. B. Gibson (April 2); L. H. Ellsworth (April 9); L. Anderson (April 12).

To be temp. Lieuts.:—M. B. Steele, W. Norrish (Mar. 22); P. K. Walters, N. V. James, J. L. Sullivan (Mar. 24); W. H. Smith, N. Wright, W. P. Robins, J. H. Brown (Mar. 25); F. J. Braund, J. L. Clark, A. B. Brydon (Mar. 27); H. McC. Nedeau, J. Jacques, A. C. Burt (Mar. 28); F. R. Page, J. Dunn, C. M. Flanders, J. E. Hanna, W. R. Cameron, F. Morthy (Mar. 29).

May 3.

The following relinquish comms.:—Temp. Capt. C. T. Bray (April 14); Temp. Lieut. M. Carson, on termination of engagement (April 12).

To be temp. Capt. while commanding a section of a Tunnelling Co.:—Lt. W. T. Wilson, Canadian A.V.C.

To be temp. Lieut.:—Pte. H. W. Craig, 81185, Canadian A.V.C. (Feb. 11).

The following casualties are reported:—

DIED—Capt. H. M. Baker, Australian A.V.C.
Pte. W. Jay, 10242.

The A.V.C. Comforts Fund.

Dear Sir,—I have pleasure in sending further lists for kind favour of publication. May I say that I have received most grateful letters from A.V.C. Officers in Egypt, Mesopotamia, and Salonika, expressing on behalf of themselves and the N.C.Os. and men in their charge, their warm thanks for, and appreciation of the comments of "Comforts"—books, weekly papers, tobacco, etc., which I have sent out from the Comforts Fund.

One officer writes.—"The comforts your parcels contained were perfect godsend to us, particularly the socks. It is difficult to express our delight on receiving such a splendid collection of useful articles."

Another writes: "The long looked-forward-to parcels from you have just arrived, and on behalf of everybody in this section, we tender to you and your kind lady helpers our most sincere thanks. The books, tobacco, and stationery are the greatest boon to us here in the desert."

I trust that all those supporters of Our Fund will accept these expressions of thanks as *to themselves*, and will continue to send in contributions for the A.V.C.—overseas, and also endeavour to interest others to help likewise.—Yours sincerely,

ADELAIDE M. MOORE.

Strathyre, Parsifal Road,
Hampstead, N.W. May 3rd.

Further Subscriptions received since April 8th:—

	£	s.	d.
Mr. W. L. Cockburn	1	1	0
Major E. J. Lawson, A.V.C.	1	1	0
Mrs. Hunting (collected)	1	1	0
Capt. R. C. Matthews, A.V.C., Salonika	2	2	0
Anonymous—"Somewhere in France"	2	2	0

Parcels received from:—

Mrs. Barcham, Mrs. Fearnside, Mrs. Hibbard, Mrs. Burke-Savage, Mrs. Porteous, Mrs. Lindsay (Dumfries), Mrs. Kirby, Mrs. Baird (Edinburgh), Mrs. Berrie Biddell (Torquay).

Donations to R.O.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds:—

Officers A.V.C., at Lathom Park:—

J. W. Brittlebank, Major A.V.C.	£1	1	0
S. Robson, Capt. A.V.C.	1	1	0
D. Pollock, Capt. A.V.C.	1	1	0
W. Andrew, Capt. A.V.C.	1	1	0
F. S. Warburton, Lieut. A.V.C.	1	1	0
E. Patrick, Lieut. A.V.C.	1	1	0
J. Whitehead, Lieut. A.V.C.	1	1	0
P. J. O'Brien, Lieut. A.V.C.	1	1	0
H. F. Reynolds, Lieut. A.V.C.	1	1	0
R. C. Baxter, Downham Market	1	1	0
F. Chambers, Capt. A.V.C.	1	1	0
A. N. Foster, Capt. A.V.C.	1	1	0
C. Masson, Torquay	1	1	0
R. C. Matthews, Capt. A.V.C.	1	1	0
P. Penhale, Barnstaple	2	2	0
W. Perryman, London	1	1	0
Western Counties Vet. Medical Association	5	5	0
Amount previously acknowledged	201	8	0
	£224	10	0

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donation is reported:—

G. J. Harvey, Bangkok, Siam	£2	2	0
H. E. Irwin, Capt. A.V.C.	5	0	0
Previously reported	141	15	9
Total	£148	17	9

OBITUARY.

P. A. WILKS, M.R.C.V.S., 60 Coldbath Rd., Harrogate.
Graduated, Lond: May, 1892.

Mr. Wilks died on April 26th, aged 44.

WALTER DREWITT, M.R.C.V.S., Pine Tree Glen, Bournemouth West.
Lond: April, 1884.

Death occurred on April 28th, at the age of 52.

The Sterilisation of Tuberculous Meat in Glasgow.

Mr. MacGregor, of Messrs. Ernest Scott & Co., engineers, Waterloo Street, kindly offered to instal at his own expense an apparatus by which the tests to determine the changes which tuberculous meat undergoes when subjected to a high temperature in a steam steriliser could be carried out on a commercial basis. This offer was accepted, and although the apparatus was not designed for this purpose, the sterilising of the meat was effected in a satisfactory manner.

Briefly, the apparatus may be described as a cylinder 4½ ft. long and 1½ ft. diameter; the under third being double-walled. Steam may be admitted either into the interior of the cylinder or into the double-walled compartment. In the interior of the cylinder is a moveable tray, with a receptacle underneath to collect the juices as they drip from the meat. A pressure gauge and thermometer are attached. After the meat is placed on the tray, the apparatus is hermetically closed. The steam is then admitted to the double-walled compartment, with the view of facilitating the creation of a

vacuum, which is secured by means of an exhaust pump. When the required vacuum has been obtained, the steam is admitted into the cylinder, and comes into direct contact with the meat.

Into the centre of the largest piece of meat is inserted a contact thermometer, attached by wires to a battery and electric bell. When the temperature in the centre of the selected piece has been raised to 195° F., i.e., the ascertained thermal death point of the bacillus of tuberculosis, a contact is formed, and the bell rings. After the bell has rung, steam is maintained for 15 minutes, and as the temperature would be steadily rising during that 15 minutes it can with safety be asserted that all tubercle bacilli which may be either on or in the meat have been killed.

The following are particulars of three tests made with meat which had been rejected as unfit for human food on account of tuberculosis.

(A) Three pieces of beef weighing 10 lb., 7 lb., and 6 lb. respectively were cut from the rump of a bullock in prime condition.

Time in steriliser,	1 hour 45 mins.
Weight before cooking	23 lb.
" after cooking	16½ lb.
Gravy and fat	5½
Unrecovered	1

(B) Three roasts, each weighing 8 lb., from a second grade cow carcass.

Time in steriliser,	2 hours 14 mins.
Weight before cooking	24 lb.
" after cooking	13½ lb.
Gravy and fat	8½
Unrecovered	2½

(C) Three pieces, each weighing about 7 lb., from the thick portion of the foreleg of a second grade cow carcass.

Time in steriliser	1 hour 47 mins.
Weight before cooking	21 lb.
" after cooking	12 lb.
Gravy and fat	6½
Unrecovered	2½

Bacteriologist's Report.

The samples of cooked meat submitted by you to be tested bacteriologically as to the efficiency of cooking in producing complete sterilisation, have given results as undernoted:

Samples A and B, received on November 4th, proved quite sterile by ordinary culture tests, and gave rise to no tubercular or other morbid reaction on inoculation.

Sample C, received on November 5th, and showing tubercles on pleura over portions of three ribs, also gave negative results when tested in the same manner by culture and inoculation.

The pieces of meat forming test C were untrimmed, and in consequence the efficiency of the process was subjected to a severe trial.

The results obtained by Dr. Buchanan are in agreement with those of other investigators.

Chemical Examination.

Portions of (A) were submitted to the chemist, and he reports:—

Herewith submit the results of the chemical examination of samples of tubercular beef, marked raw, steamed, and stewed respectively.

		Raw.	Steamed.	Stewed.
Moisture	p/c	72.11	61.36	47.54
Fat		4.61	5.84	14.26
Total proteid		21.89	31.83	35.48
Ash		1.39	0.97	2.72

The cooking of the stewed sample had been carried so far that the separation of the liquid from the solid was impracticable, therefore the whole of the sample was passed through a mincing machine, and thoroughly incorporated before analysis.

Cold Water Extract.

Total extract	p/c	7.41	3.39	6.07
Proteids, soluble		6.03	2.80	4.46
Albumin	"	1.40	1.04	3.22
Ash	"	1.08	0.79	2.53
Collagene		0.30	0.41	0.26
Muscular fibre		15.54	28.74	28.40

The liquid portion from the steamed sample weighed 2800 grams, 580 grams consisted of fat and 2220 grams of aqueous extract (4.26 %) which possessed the following composition:—

Proteid	p/c 0.56	Ash	p/c 0.90
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The object in forwarding to the chemist meat in a raw, steamed, and stewed condition was that I should then be in a position to present comparative figures, which would enable the committee to determine the relative food value of the same meat sterilised, or stewed by the ordinary household method. Unfortunately the stewing had been overdone, and in consequence it is a somewhat unfair comparison.

It will be observed that the amount of moisture in the stewed meat is low, but the fat, proteids, and ash are high. Again, the cold water extracts show a marked difference between the steamed and stewed meats, but if the figures of the analysis of the aqueous portion of steamed sample be added to those of the solid portion, a more accurate idea of the relative value of the two processes will be obtained.

	Steamed—Solid.	Aqueous.	Total.	Cold.	Stewed.
Total extract	p/c 3.39	4.26	7.65	7.41	6.07
Total proteids, soluble	2.80	0.56	3.36	6.03	4.46
Albumin, soluble	1.04	—	1.04	1.40	3.22
Ash	0.79	0.90	1.69	1.08	2.53

The disparity in the results obtained in the examination of the steamed and of the stewed meats is due to, in addition to the overcooking, to which reference has already been made, the great evaporation which occurs in the latter process, whereas in the former there is little or no escape of vapour.

The result of the analytical examination shows that meat after sterilisation is a highly nutritious food, and as each customer would receive in addition to the meat purchased a quantity of the aqueous portion, no part of the nutriment would be lost to the consumer.*

Loss of Weight.

In all three tests a loss in weight occurred during the sterilising process.

A, weight lost	... 6½ lb. = 29.3 %
B, "	... 10½ lb. = 44.7
C, "	... 9 lb. = 42.8

Falk found the loss in weight during the process of sterilisation to be:—

Beef from	53.75 to 64.4 (average 60 %)
Pork "	37.54 to 51.05 (" 46.04 %)

Rieck found the average loss in—	
21 bovine carcasses	43.1 %
37 pig "	16.7

The loss in weight in the three Glasgow tests is much below that found by Falk, and is no greater than that recorded by Rieck.

Appearance, Odour and Flavour of the Meat after Sterilisation.

The meat was in appearance very juicy and normal in every respect. Its odour was agreeable, and in taste resembled somewhat roast beef.—*Meat Trades' Journal*.

* * It may be contended that instead of "highly nutritious" this should read, "contains a large proportion of nutritive substances." Few who used the early importations of American and Australian tinned meats would admit that they were "highly nutritious" although they may have contained a good proportion of nutritive material. But there is no excuse for the continued waste of much good food material in this country when it could so easily be made available. The French have used the process for years past.

H. & A. S. and Dick College.

At the April monthly meeting of directors, Mr. Douglas of Auchlochan in the chair, it was reported that the Board had made an additional grant of £600 to the building fund of the new Royal (Dick) Veterinary College, making a total grant of £1000. The condition attached is that the Society be assured that the College will be continuously maintained as a teaching institution in veterinary medicine and surgery.

"Joint-ill" and research.

In a letter to the Editor of *The Scottish Farmer* Mr. G. Bertram Shields says:—"At our last meeting of the East Lothian Horse Breeding Society we had the matter of joint-ill in foals under discussion, and I read some correspondence I had had with Professor Bradley, of the Royal (Dick) Veterinary College. My letter to him was principally to ask the question, "If funds could be raised, would the College undertake to go into the question of joint-ill in foals, and do research and bacteriological work in connection with it, and endeavour to find the cause of, and cure for it?"

In reply the Professor says:—"We are always most anxious to receive suggestions which will point to any direction in which we can be of service to agriculture, for we hold it to be one of the functions of the College to advance useful knowledge. You will understand therefore that we should only be too glad to conduct research, under the direction of our Professor of Pathology, into the bacteriology of joint-ill. At the present time, however, research is much hampered in two directions. There is, first, the financial side of the matter, upon which I need say no more, and, in the second place, there is the difficulty of getting assistance. In peace time suitable graduates were all too few; at the present time every graduate joins the Army Veterinary Corps as soon as or shortly after he receives his diploma. This being so, you will understand that research is very slow, because it has to be done in such time as can be spared from ordinary routine work. In the meantime please let me assure you that we should be glad to undertake such research as is possible."

I think we can hardly expect any College staff to take up research work of this kind, and at the same time carry on the ordinary work of the College, without the

financial backing of breeders all over the country which would permit of the appointing of someone to specialise in the particular department, and I am certain that if this matter gets the publicity it deserves, the breeders would not be slow to respond, nor would the societies you mention, the Highland and Agricultural, the Clydesdale Horse, and the Shire Horse.

It is not too well known that a splendid new Veterinary College has been erected in Edinburgh to the building fund of which the "Highland" has subscribed handsomely, where there will be ample room and convenience for work of this kind to be carried on—work which we would hope would eventually be the means of saving the lives of hundreds of foals and thousands of pounds to the breeders of this country. As we stand to-day, both breeders and the "profession" are practically in the dark regarding this fell disease, and, as you say, it is only by "conferring together" that a start can be made in fighting against it."

Petrol Supplies.

The President of the Board of Trade has appointed the following gentlemen a Committee of Control:—

Mr. Oliver Bury (Chairman),
Mr. Albert Edward Bowen,
Sir John Prescott Hewett, G.C.S.I.,
Mr. Philip G. L. Webb,

to control the supply and distribution of petrol, and to consider what measures are necessary in the national interest.

(1) To ensure that adequate supplies of petrol shall be available for the purposes of the war and for other essential needs.

(2) With the above object to regulate the use of petrol for other purposes in the United Kingdom during the period of the war, and, subject to the direction of the Board of Trade, to give executive effect to the measures decided upon.

Mr. H. W. Cole, of the Board of Trade, will act as Secretary to the Committee, whose offices will be at 29 Abingdon Street, Westminster, S.W.

The Committee is not prepared to consider individual applications for supplies of petrol nor to deal with correspondence relative thereto.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended April 29	19	21					53	74	2	123	446
Corresponding	1915 ...	18	20				‡30	‡79	1	117	543
week in	1914 ...	22	23		1	1	43	65		107	1481
	1913 ...	8	9		2	11	52	95		58	768
Total for 18 weeks, 1916	240	273	1	24	21	62	1234	2937	167	1646	5137
Corresponding	1915 ...	285	317		11	16	‡223	‡526	144	1392	6089
period in	1914 ...	337	360	11	34	80	1139	2055	139	1272	12848
	1913 ...	242	260		61	204	1295	2693	112	748	10098

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.
Board of Agriculture and Fisheries, May 2, 1916

† Counties affected, animals attacked:—
Excluding outbreaks in army horses.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1453.

MAY 13, 1916.

VOL. XXVIII.

AN UNTRIED TREATMENT OF PLEURISY.

This week we publish an abridged Italian report upon autoserotherapy and serotherapy in equine pleurisy and pleuro-pneumonia, which is of interest on account of the present paucity of records on the subject. These treatments are now fairly well known in human medicine; but they appear to have been very little practised by veterinary surgeons. The whole sum of the existing records of their use in veterinary practice is quite insufficient to justify a conclusion as to their value. The present report is highly encouraging so far as it goes; but that is all that can fairly be said of it. Possibly it may induce some of our members, especially those in the army, to give the treatments a trial.

Many men in the army must now be seeing more cases of pleuric exudation than usually fall to the lot of the private practitioner; and this is a good opportunity of improving our knowledge of their treatment. One point in particular arises which the experience of the war ought to definitely settle—the desirability of puncturing the chest very early. Before the war, some clinicians of high repute had begun to advocate puncturing the chest much more often, and at a much earlier stage of the illness, than had ever been customary before. According to this school, puncture should not be delayed until the presence of fluid in the chest is certain or nearly so, but should be adopted as a routine measure whenever the presence of fluid appears even possible. Practically this means a routine exploratory puncture, which is certain to very often yield negative results. There is a great deal to be said in support of it; and nothing could be said against it from a professional point of view, for veterinary surgeons know that a properly performed exploratory puncture is quite innocuous. But clients often do not know this, nor do they understand the impossibility of diagnosing pleural effusion very early; and it is certain that some veterinary surgeons have hesitated to adopt this method in practice on account of the probable effect of frequent fruitless punctures upon clients. Fear of the client has held veterinary practice back in many directions, and this is one of them. In the army, a veterinary surgeon has a much more free hand in treating individual cases than he often has in private practice; and it may be noted that this method of early routine puncture at least very largely originated in the Army. There, also, it ought to be fairly tested; and, if it is justified during the war, it will be easy afterwards to establish it in civil practice.

NOTE ON THE SUBCUTANEOUS USE OF ARECOLINE.

Arecoline is not a suitable drug for impaction of bowels. A purgative and sedative should be first given, followed on with Arecoline in due course.

We have used it in ordinary cases of colic, with quite good results. The first injection should always be given combined with Strychnine (Arecoline $\frac{1}{2}$ gr., Sulphate of Strychnine $\frac{1}{2}$ gr.). I have frequently observed marked salivation and peristaltic action within seven to ten minutes. If not much result within half an hour, we give a second dose—one grain Arecoline alone. If that fails we would try Eserine; but in ordinary cases the second dose (1 gr.) usually causes purgation.

The experience out here is that Arecoline, even given in $\frac{1}{2}$ gr. doses, will often produce accelerated breathing to a marked extent unless used with Strychnine sulphate. I would strongly advise the use of the combined drugs. I may say hypodermics are extensively used out here, and, I consider, a very convenient way of treating the cases; particularly when you have a number to handle. We always had Parke, Davis & Co.'s tablets, from Detroit.

Halifax, Nova Scotia.

J. B.

MILK FEVER (?) FOUR MONTHS AFTER CALVING.

A case of this nature occurred in my practice last week, and I record it because, although I think it is not unique, I believe it to be very unusual; and to show that similar cases, although occurring some considerable time after parturition, should be treated precisely the same as though the animal had only recently calved.

It was on the night of the 5th inst. I was called to this case. At that time the patient was down and unable to rise, showing signs of cerebral trouble, such as champing of the mouth and a flow of frothy saliva. On being informed that the cow had calved on 9th January last, I, at the time, did not diagnose milk fever, but thought I had some form of hysteria to deal with. Consequently I gave a dose of Magnes. sulph. and Chloral hydrate, the patient swallowing this with difficulty.

I saw her the following morning about 10 o'clock and found her much worse. She was quite helpless, and unconscious, with the peculiar moan, dropping lower jaw and eyes gazing at nothing, with which one is so well acquainted; in fact, a typical case of milk fever.

I at once put her through the regulation injection and inflation of the udder treatment, and with the exception of having her propped up on the sternum and the application of cold swabs to the head, did nothing else. She soon began to rally, and I was informed on my visit the next day that she was up in four hours, and she had gone on well since.

Perhaps a more up-to-date scientist than I am can explain why toxic changes can take place in the udder so long after parting with the young.

R. W. KNOWLES, M.R.C.V.S.

Wisbech, May 8.

[In some similar cases there has been evidence of the animal having fed freely on rich green food, such as clover, but in this case it was stated that the cow had been on ordinary grass pasture.]

ABSTRACTS FROM FOREIGN JOURNALS.

AUTO-SEROTHERAPY AND SEROTHERAPY WITH PLEURIC EXUDATE IN EQUINE PLEURISY AND PLEURO-PNEUMONIA.

Domenico Germani, a captain in the Italian Army Veterinary Service, having tested these treatments with good results, has just published his experience of them. Auto-serotherapy in pleurisy is associated with the name of Gilbert, who first applied it to this disease in man. It consists in subcutaneously injecting a small quantity of the pleuric exudate. It has been much practised in human medicine; but in veterinary literature the records of its use are few, and opinions differ as to its value. Magnin, in 1909, practised it in one case of pleurisy associated with strangles without success. Darrow, in four cases, obtained two recoveries, one doubtful result and one failure. Haan, in 1913, obtained "miraculous successes" in some desperate cases.

The author's cases were of pleurisy which accompanied or followed unilateral or bilateral pneumonia, probably of high infectivity. In three cases alone, in which it was possible to examine the pleuric exudate, typical streptococci were encountered along with other microbes, and predominating over them. Lack of facilities prevented the author from carrying the bacteriological investigation further than this. He reports the clinical histories of ten cases, seven of which are summarised below.

Case I. A mare, four-and-a-half years old, of Sardinian breed, admitted to the infirmary on February 1, with uncertain gait, loss of appetite, dullness, prostration, keen thirst, temperature of 104° F., small pulse, superficial abdominal respiration, and pain upon digital pressure of the ribs. Pleurisy was diagnosed; and treatment was directed to the prevention of effusion. On February 5 effusion was commencing, and the temperature was 102.2. On February 8th the temperature was the same; thoracentesis was

performed, 500 c.c. of exudate was withdrawn, and 150 c.c. of this was injected subcutaneously.

On February 9 the temperature was 103.1° F.; the thoracentesis was repeated, and 100 c.c. of exudate was injected subcutaneously. On February 10 the temperature was still 103.1° F.; but the horse was easier, and the effusion was inclining to absorption. On February 11 the temperature was 101.2°; diuresis was increased, and the urine was normal in colour. Recovery followed.

Case II. A five-year-old horse of Sicilian breed entered the infirmary on February 28 with febrile symptoms. On the 29th, he showed all the clinical appearances of bilateral pneumonia. On March 7 there was bilateral pleuric effusion; and the temperature was 102.2° F. An exploratory puncture gave positive results, but the horse's condition was so bad that only a minimal quantity of exudate was withdrawn for fear of inducing a mortal syncope. On March 9 the temperature was 101.2° F.; the horse was extremely prostrated, with the eyes glassy and fixed, and groaned at the least displacement. Death appeared imminent. Sero-therapy was resorted to, use being made of pleuric exudate drawn from another horse with an identical disease. A dose of 100 c.c. was injected. On March 10 the temperature was 102.9° F., and a second injection of the same exudate in the same quantity was given. A third injection of the same dose was given on March 11. The improvement was surprising; resolution commenced, and the horse became convalescent on March 18.

Case III. was a filly, two-and-a-half years old, of Sardinian breed, put under treatment on February 28 for unilateral pneumonia. On March 6 the condition suddenly became worse; the temperature rose to 105.8° F., and there was bilateral pleuric effusion in the inferior zone of the chest. On March 7 one litre of pleuric exudate was withdrawn, and 100 c.c. of it was injected subcutaneously. In the evening the temperature had not undergone sensible oscillations. On March 9 a second injection was given; the temperature remained constantly at from 100.4° F. to 100.9° F. On March 11 the exudate had assumed a greenish tint and a fluid character, and was now almost completely absorbed. The animal gave no further cause for uneasiness, and recovered.

Case IV. A five-year-old horse of Sicilian breed, much reduced in condition owing to having previously undergone castration, came under treatment on February 28 with symptoms of acute muscular rheumatism. On March 3 he showed unilateral pneumonia, and on March 8 bilateral pleuric effusion. On March 9 the first and only thoracentesis was performed; one litre of exudate was withdrawn, and 100 c.c. of this was injected for seven consecutive days. The temperature remained persistently elevated at from 102.2° F. to 103.1° F. The horse, which, of all those treated, was the one that showed the greatest depression, commenced to improve on March 23 and recovered.

Case V. A five-year-old horse of Sardinian breed came under treatment on March 12 with bilateral pneumonia. Ordinary treatment was

adopted. On March 18 the horse was in so grave a condition that treatment appeared useless; each respiration caused a violent agitation of the whole body, accompanied by a groan which could be heard outside the stable. Serotherapy was tried as an experiment, the pleuric exudate from Case IV. being injected subcutaneously in a dose of 90 c.c. Rapid and surprising improvement followed, and recovery was complete on April 2.

Case VI. An eight-year-old horse of Sardinian breed came under treatment on March 18 with a high temperature and profound alterations of the respiratory rhythm. Unilateral pneumonia was diagnosed. On March 20 an exploratory puncture gave positive results; and 100 c.c. of the pleuric exudate from Case IV. was injected subcutaneously. The temperature was persistently elevated. On March 21 a second injection was given; and in the evening the temperature was reduced to 101.6° F. On March 23 the temperature was almost normal, and recovery followed.

Case VII. A three-year-old colt of Sardinian breed came under treatment on March 13. Pneumonia and exudative pleurisy were diagnosed and auto-serotherapy was adopted, 150 c.c. of exudate being injected for two consecutive days. The temperature did not undergo notable oscillations under the influence of the treatment. On March 22 an exploratory puncture revealed a considerable descent of the level of the exudate, which had assumed a fluid and greenish aspect. Recovery followed.

From these observations the author concludes that both auto-serotherapy and serotherapy, in horses affected with infectious pleuro-pneumonia with pleuric exudate, are alike innocuous and advantageous. The pleuric exudate, besides stimulating the formation of antibodies in the organism of the subject from which it comes, exercises identical functions in other subjects of the same species affected with an analogous disease. (*La Clinica Veterinaria*).

[In the author's other three cases neither auto-serotherapy nor serotherapy was adopted.—*Transl.*]

ŒSOPHAGEAL DIVERTICULUM IN A PIG.

The apparent rarity of this condition in the pig has induced Müller, of Lilienthal, to record the following case.

The subject was a young pig, which Müller saw at the age of about ten weeks, the owner having bought it along with others about a week before. Since then the pig had eaten fairly well, but coughed a great deal and was "short of breath." Now and then it vomited quite small quantities of food.

Müller found that the animal was very backward in development compared with the others of the same litter, and that it breathed short and coughed much. Fever was not present. Müller suspected swine plague, and the official veterinarian agreed. The pig was shut up on that account, but was not slaughtered.

For the next five months, despite the best feeding, the pig continued to thrive very badly. At the end of that time it was slaughtered on account of its backward development. Müller did not see it again during the period, and does not say whether the cough and other respiratory symptoms persisted. The live weight at the time of slaughter was 48 kilogrammes, while the other pigs weighed about 80 kilogrammes each.

Post-mortem, all the organs were found to be healthy. The heart and lungs were enlarged, the lungs especially so. The cervical portion of the œsophagus presented a sausage-shaped doughy swelling, fairly uniform in outline, about 3-1/5 in. long and about 4-4/5 in. in circumference. When cut into longitudinally, this swelling was found to contain fresh green food. The mucous membrane showed no pathological alterations. The entrance to the diverticulum was funnel-shaped; the exit from it formed a small opening, through which an ordinary lead pencil could only just be passed. The further course of the œsophagus showed no abnormalities.

Müller remarks that the anatomical structure of the pig renders it difficult to diagnose a diverticulum of œsophagus in this animal. In view of the symptoms that were observed, therefore, the diagnosis of swine plague is quite explicable.—(*Berliner Tier. Woch.*)
W. R. C.

ANNUAL ADMINISTRATION REPORT OF THE CIVIL VETERINARY DEPARTMENT IN SIND FOR THE OFFICIAL YEAR 1914-15.*

Mr. J. G. Cattell held charge of the office of Superintendent, Civil Veterinary Department, Sind, Baluchistan and Rajputana, from 1st to 16th April, 1914, and from 19th October, 1914, to 31st March, 1915. He was on combined leave from the 17th April, 1914, to the 18th October, 1914. While in charge of the office Mr. Cattell spent 114 days on tour in Sind, and travelled 526 miles by road and 3298 miles by rail. Last year he was on tour for 127 days, and travelled 454 miles by road, and 3769 miles by rail. He toured under canvas in parts of the Thar and Parkar, Nawabshah, Hyderabad and Karachi districts, inspected all the veterinary dispensaries in the province, and attended the Horse Show at Jacobabad, Upper Sind Frontier District, and acted as a member of the Judging Committee at the Cattle Show held at Landhi in the Karachi District. When touring in the province the Superintendent checked the inoculation work of Veterinary Assistants when possible and attended outbreaks of epidemic disease.

Mr. E. S. Farbrother, I.C.V.D., who acted for the Superintendent during his absence on leave from April to October, 1914, remained attached to the Superintendent's office for the remainder of the year. He availed himself of one month's privilege leave from 5th November to 4th December, 1914. Mr. Farbrother was on tour in Sind for 47 days, when he travelled 206 miles by road and 3586 miles by rail. Mr. Farbrother attended the opening ceremony of the Lawrence Veterinary Dispensary at Sujawal and visited Sukkur to select a site for a new veterinary dispensary to be opened there. He attended the mule show at Larkana and the cattle show at Landhi, and inspected all the veterinary dispensaries in the province except the one at Hala. He also visited

* Concluding portion of Report of C.V.D. Bombay Presidency (pp. 401, 447 ante.)

outbreaks of disease and checked the inoculation work performed by Veterinary Assistant.

Veterinary Instruction. There were four stipendiary students studying at the Bombay Veterinary College during the year 1913-14. Two more scholars were sent during the year under report, making a total of six students studying at the College at the close of the year.

TREATMENT OF DISEASE.

During the year epidemic disease was reported from each of the seven districts in the province. One hundred and seventy-two deaths were reported amongst equines, 1965 amongst bovines, and 423 amongst other animals, against 73,895 and 94 deaths respectively reported last year. This information cannot be considered as accurate, and reliance should not be attached to the mortality statistics.

Surra appeared in four districts. The mortality was 163 against 62 deaths reported last year.

Several cases of equine *surra* were treated at dispensaries with disappointing results.

Rinderpest. The disease broke out in the Karachi and Hyderabad districts; 273 animals were attacked, of which 200 died against 246 deaths reported last year. No inoculations were performed against rinderpest, as either the disease was reported too late or the owners refused to have their cattle inoculated.

Foot-and-mouth-disease occurred in the Karachi, Larkana, Hyderabad, and Thar and Parkar districts, and the animals attacked numbered 2002. The mortality from this disease was 46. Most of the outbreaks were attended by the veterinary staff. As the deaths from this disease are small, people pay little attention to it and the extent of the prevalence of foot-and-mouth disease in a district cannot be approximately estimated.

Haemorrhagic septicaemia appeared in all the districts except the Upper Sind Frontier District; 1467 animals were attacked, of which 1407 died, against a mortality of 341 in the previous year.

Preventive inoculation (serum alone) was carried out by the veterinary staff in 22 outbreaks in the Karachi, Hyderabad and Larkana districts. 2984 animals were inoculated, of which four died after inoculation. 422 uninoculated contact animals died of the disease. Last year 856 inoculations were performed. There is considerable opposition to preventive inoculation and it requires tact to induce owners to have their cattle inoculated. An encouraging feature during the year was that several cattle owners, who had had previous experience of inoculation, came forward voluntarily when disease appeared in their villages during the year under report, and asked that their healthy cattle might be inoculated.

Black quarter caused the death of 186 animals out of 238 animals attacked by the disease, against 46 deaths last year. One hundred animals were vaccinated (pillule) against the disease, of which three died.

Other contagious diseases. One hundred and twenty-six deaths occurred amongst bovines from other contagious diseases, the most important of which were parasitic.

Pleuro-pneumonia contagiosa caused the death of 163 goats.

Anthrax. Three deaths were reported (one equine) from the Karachi district against 20 reported last year.

Bubonic Plague. Four cases, which proved fatal, were detected in the Zoological Gardens, Karachi, against three deaths reported from the gardens last year.

Rabies. Fifty cases of rabies were reported by Veterinary Assistants during the year. Of the 50 cases 47 were reported by the Veterinary Graduate, Karachi. The disease appears to be increasing in Karachi. The Veterinary Graduate induced 25 persons who were

bitten by rabid animals to go to the Pasteur Institute, Kasauli, for treatment. The Superintendent understands that several other persons were sent to Kasauli by medical practitioners.

Other contagious diseases. Two hundred deaths were reported from other contagious diseases in animals other than equines and bovines. The chief causes of mortality were fluke disease and parasitic gastro-enteritis.

Touring by Veterinary Assistants. Instructions were issued at the beginning of the year that all Veterinary Assistants should do a certain amount of touring each month as apart from visits for attendance on reported outbreaks of epidemic disease. These tours have been of considerable value in making known the work of the department in the villages and of bringing to light unreported outbreaks of disease. When all dispensaries are provided with trained Salutri-compounders the amount of touring to be done by Veterinary Assistants will be increased. Two thousand five hundred and forty-three cases were treated for contagious and non-contagious diseases and 11 castrations were performed on tour, as compared with 2,916 animals treated and 2 castrations performed last year. Veterinary Assistants visited 938 villages against 381 villages visited last year.

Veterinary Dispensaries. At the commencement of the year there were 11 dispensaries working in the province. One more was opened at Kandkot in the Upper Sind Frontier District in August 1914. Arrangements were made to open dispensaries in hired buildings at Matli in the Hyderabad District and at Nawabshah, but suitable graduates could not be obtained and the dispensaries were not opened.

The number of patients actually treated at dispensaries was 15,706 and medicines and advice were supplied to the owners of 1,939 cases which were not brought to the dispensaries, making a total of 17,545 against 16,013 in the previous year. The number of castrations performed at dispensaries was 69 as compared with 74 last year.

Buildings were completed at three stations during the year under report. Additions and alterations were carried out at three dispensaries.

Fairs and Shows. A cattle show was held at Landhi in the Karachi District in February 1915 in conjunction with the Agricultural Show. One-hundred and fifty-one animals competed for prizes. A sum of Rs. 179, two silver medals and a *lungi* were awarded from Local Funds, and two silver tumblers were presented by an Indian gentleman. This was the first show held at Landhi. The classes were well filled and on the whole the cattle, which were of the Karachi breed, were of good quality.

Establishment. At the commencement of the year there were 11 Veterinary Assistants employed. Two men were appointed during the year.

Twelve Veterinary Assistants were employed at dispensaries and one as reserve. Of the 13 Veterinary Assistants, 11 are Government servants and 2 are paid by District Local Boards.

Khan Sahib S. G. Haji held the post of Deputy Superintendent throughout the year. He was on tour in the province for 158 days as against 150 last year. He travelled 5,233 miles by rail and 1,209 miles by road as compared with 7,034 and 1,122 miles respectively travelled last year. The Deputy Superintendent visited 241 villages against 214 villages visited last year. He inspected all the veterinary dispensaries in the province twice except the one at Kandkot which was only opened in August 1914.

The Deputy Superintendent checked inoculation work and attended outbreaks of disease when possible. He made inspections of cattle and delivered lectures to stock-owners in the villages. He helped to make

arrangements for and acted as a member of the Judging Committee at the Landhi Cattle Show. He assisted the military authorities in purchasing cattle for the army, and a representative of the Japanese Government in selecting cattle for export to Japan. Mr. Haji worked satisfactorily throughout the year.

GENERAL REMARKS.

The increased allowances sanctioned for the subordinate veterinary staff in Sind, should overcome the difficulty experienced since the reorganization of the department of getting suitable men to serve in the province and of obtaining Sindhi candidates for the Bombay Veterinary College.

Under the rules introduced in 1913-14 there has been a considerable improvement in the reporting of outbreaks of epidemic disease, although it is still unsatisfactory. Many outbreaks are not reported at all. In order to deal effectively with outbreaks of disease prompt reporting is essential, and this applies specially to the disease haemorrhagic septicaemia which runs a rapid course and causes a high rate of mortality.

The Superintendent has submitted a note to the Commissioner in Sind on the advisability of doing something to conserve the Karachi breed of milch cattle. High prices are obtainable for good Karachi cattle for export to Ceylon, Zanzibar, Japan and elsewhere and cattle owners, tempted by the prices, have sold many of their best animals with the result that the herds are now showing signs of deterioration.

J. G. CATTELL, I.C.V.D.,

Supt. C.V.D., Sind, Baluchistan and Rajputana.

The Resolution signed by the Under Secretary to Government says (Sec. 4):—"As regards the Department generally Government notice with regret that progress has been handicapped both in Sind and the Presidency by recruiting difficulties, and that the staff at the end of the year was a good deal below strength." "The administration of the Department during the year has been characterized by a degree of care and efficiency which is creditable to all concerned."

On some antiseptic dressings.

The following excerpts are from notes by Major A. Don, R.A.M.C. They are given as the result of ten months experience in a casualty clearing station, and as an unbiased comparison of the several agents used.

"Among the many methods of dressing wounds one comes across, none are really new, but one recognises many an old friend in new war paint, habilitated with elaborate word-painting more or less accurate and convincing. A dip into a good text-book of surgery in use, say, about the early part of last century will convince any sceptic, though it is a thankless task to recommend such a perusal. A good description of the treatment of foul wounds with chlorine, iodine, and saline compounds, and even of gas gangrene itself, will be found and will well repay the ardent student. The cruder drugs produced then, as now, in a short time very candidly stated, a clean surface from which exuded laudable pus—that transition in the discharge from the nauseating putrefactive debris of decaying tissues to the odourless creamy pus, then, as now, considered laudable—coming from living tissues in which are to be found the ordinary pyogenic germs alone. Putrefactive organisms can attack only dead tissues or those weakened by pyogenic processes or mechanical traumatism. To get rid of the putrefactive organisms and to prevent the ingress of the pyogenic has been the problem of

wound treatment for surgeons in the present campaign. Towards this objective I offer my experiences.

Hypertonic Solutions.

Wright's saline treatment has received perhaps more praise than any other. In theory it seemed excellent, but in practice the results are various. When used properly and in suitable cases they are good, but the cases require careful selection, and its application requires more skilled watching than can usually be given. The method and choice of cases cannot be left to the discretion of a dresser or even to the average medical man attached to a casualty clearing station, and if used as a routine dressing the results are more often positively bad than passably encouraging—often they are either too long continued for bad lacerations or are applied to many cases almost clean, where they are unsuitable.

The salt preserves the dead tissues from putrefaction (a well-known use of salt), for it is an absolute bar to the growth of putrefactive organisms; while its irritating effect on the living tissues sets up a more or less severe discharge, which helps to prevent the ingress of pyogenic germs. But such a dressing should not be covered by non-permeable tissue, which will check entirely such outward flow of serum.

Hypochlorous Acid.

Hypochlorous acid has been used in the forms eusol and eupad. The deodorizing effect is sometimes magical, especially when the dry eupad is applied to stinking, bruised, and dead tissues. But eupad so used is very caustic and very painful, and should only be applied by the surgeon himself.

Eusol solution is seldom painful, and is a good routine application, but some skins are very susceptible to it. It should always be freshly mixed, applied once or exceptionally twice daily, and should not be covered by protective. Eusol is one of the best methods we have tried, and it need not be continued after the wound is fairly clean and free from smell. A sterile dressing is then quite sufficient.

Iodine.

Iodine in spirit or watery solution acts pretty much like hydrochlorous solutions, as a deodorant, while the spirit preparations act like the hypertonic salines, by inducing a serous flow. Iodine is very irritating to most skins, and the pain continues for some time after the dressing is applied.

Spirit: Glycerine.

Methylated spirit or glycerine, alone or charged with antiseptics—for example, biniodide spirit, glycerine and ichthyol—both act like the hypertonic saline in producing free discharge, and require frequent changing. They do not cause so much pain, but are expensive to use in routine work.

Carbolic Acid.

Carbolic acid, when used pure, cauterizes the surface, and is only feebly antiseptic, as its combination with albumin dams back all discharges. It is a useless application where there is deep destruction of tissue. It runs over and destroys the skin, and cannot be recommended as a first treatment for wounds of any kind. In solutions of 1 in 60 and double cyanide gauze it is quite good in a rush. It is painless, can be applied to most wounds indiscriminately, and the dressing can be left entirely to nurses and even to orderlies in emergencies without risk. But carbolic is a weak destroyer of putrefactive organisms. The greatest danger in its application is infection of the wound from wringing the gauze with the bare hand; this can be avoided by gloves or by applying the dressing moist with sterile forceps.

Hydrogen Peroxide.

Hydrogen peroxide cleans a cavity or surface quickly, and is a good deodorant, but is not satisfactory as a wet dressing applied on gauze. The under layers become clogged and non-absorbent. It is a weak antiseptic, which at once produces its total effect if thus applied—it checks drainage of discharges and promotes absorption. Its mechanical effect is practically its only recommendation as a lotion for dressing. It is quite good as a bath for foul-smelling wounds, either alone or with boracic.

CONCLUSION.

It is not so much the antiseptic dressing used as its intelligent application that matters. Almost any one of the methods we have tried will give average good results, but there are cases in which one application is more suitable and more easily applied than any of the others, and it is here that the specialist in surgery in a casualty clearing station comes in. He should never become an enthusiast in any one method of dressing, as he is then a danger to his patients, and an embarrassment to his colleagues.

Writing on "The Prevention or Control of Infection in gunshot wounds at the earliest possible moment after their infliction," Sir Berkeley Moynihan, Lt.-Col. R.A.M.C., says:—

"Shortly after the outbreak of the war the surgeons whose duties kept them at home were amazed at the severity of the infection in the wounds of soldiers returning from France. It was felt that adequate measures were not being taken to deal with these injuries. And discussions, both public and private, were frequent and not devoid of acrimony. Sterner measures were advised, the painting of all wounds with pure carbolic acid, or with tincture of iodine, which in the few years before the war had come again into favour among surgeons for many purposes. These were tried in France very thoroughly for a certain period. A large number of wounds were treated exclusively with pure carbolic acid, a certain number with tincture of iodine, others with simple field dressings. By the time the base hospitals were reached it was not possible to say what early measures had been tried. In all wounds suppuration was rampant, and the early and thorough applications even of pure carbolic acid were found not appreciably to alter the subsequent severity of infection. Pure carbolic acid, since Lister introduced it, has been taken as the standard of germicidal power. We have thought and spoken of pure carbolic acid as something of the greatest potency, all-conquering in its fight with germs. The truth is that, speaking comparatively, pure phenol is a very feeble antiseptic; and in contending with the organisms which had obtained a firm hold on the nutrient medium of these fresh wound surfaces it was little better than nothing. Its bactericidal power, always feeble, is much reduced when it is called upon to act in the presence of serum or pus; and when used in full strength it is apt to damage healthy tissues.

"Hypochlorite" solution, the details of the making of which have been given by Dr. Dakin, has, on examination, proved to have a bactericidal value which is far higher than that of any antiseptic we have been accustomed to use. Pure carbolic acid, for example, will kill the *Staphylococcus aureus* in the presence of serum after acting for two hours when at a dilution of between 1 in 50 and 1 in 100. Dakin's solution acts in like circumstances at a dilution of 1 in 1500 to 1 in 2000. It possesses other qualities. It is diffusible, it does not irritate unduly, it has a remarkable power of clearing away sloughs, it is easily obtainable, and it is very cheap. It has proved, in the hands both of the French

and the British surgeons who have tried it, to retard or to prevent the development of sepsis more effectively than any other preparation that has been tried.

"I have had the opportunity of trying another preparation by Dr. Dakin—"chloramine," which in some respects is better than the hypochlorite solution. Chloramine is toluene-sodium-sulphochloramide. The molecular concentration required to kill staphylococci in presence of serum is one-fifth that of the hypochlorite solution. It is very soluble and very easily diffused. After many trials, Dr. Dakin succeeded in preparing chloramine gauze—a gauze in whose meshes powdered chloramine is held. This gauze, thoroughly impregnated with this strongly antiseptic powder, was made in the hope that when introduced into the wound the discharges would dissolve the powder little by little and carry it to all parts of the surface with which they come in contact. In our work in Leeds and elsewhere in the Northern Command we have used a certain amount of this new gauze, with results that justify us in believing that it is the best method so far introduced for checking and controlling the development of infective processes. I have used it in wounds very heavily infected, and its power of cleaning a wound, abolishing the offensiveness of discharges, and bringing about a growth of new healthy granulation tissue is very remarkable. The opportunities for testing its inhibitory properties are very few in civil practice, but such little experience as I possess suggests that it may prove to be one of the most powerful of all known methods for aborting a grave infection in any of the wounds of war."—*Brit. Med. Jour.*

THE THERAPEUTIC VALUE OF HYPOCHLOROUS ACID, BY RAÚL FLORES CORDOVA, M.D. LIMA, from the Lister Institute of Preventive Medicine, London.

During the last nine months various investigators have dealt with the hypochlorites as antiseptics—Lorrain Smith, Murray Drennan, Rennie and Campbell, Dakin, Schütze—and also given the results of treatment by intravenous injection—Lorrain Smith, Ritchie and Rennie, and Brand and Keith, in cases of puerperal infections; Fraser and Bates, in cases of toxæmia consequent to gas gangrene.

In this paper I publish further and more detailed experiments to determine the antitoxic and antiseptic power of hypochlorous acid *in vivo*.

It has been shown by Dakin that in *in vitro* staphylococci suspended in saline are killed within two hours by sodium hypochlorite, 1 in 500,000, but that when serum is present a concentration of 1 in 1500 is needed.

It has been thought, therefore, important to prove experimentally (1) which is the highest concentration of HClO tolerated by animals, and (2) what is the lowest concentration producing an antiseptic or antitoxic effect.

Rabbits of about two kilos in weight, and, therefore, with approximately 90 c.cm. blood were used. The HClO solution employed was eusol with a hypochlorous acid concentration of 0.5 per cent., physiological saline being used in place of water and CaCl_2 added on account of its antitoxic properties; it is prepared as follows:

To 800 c.cm. physiological saline add 10 grams bleaching power and 10 grams boric acid, shake vigorously, allow to stand for two or three hours, then filter and add to the filtrate 2 grams of chemically pure calcium chloride. The solution now contains HClO in a strength of between 0.5 and 0.6 per cent.; saline is added until the required concentration of 0.5 per cent. is reached. Owing to its instability the solution must not be used longer than three days after preparation.

While 20 c.cm. of this HClO solution, giving a con-

centration of about 1 in 1100 in the blood of the animal, were generally well tolerated, 10 c.cm. proved to be entirely harmless, and the concentration of about 1 in 2000 that resulted appeared, moreover, to be near the limit of efficiency; 5 c.cm. doses (about 1 in 3800) seldom led to beneficial results.

Attention may be drawn to the fact that a great number of toxins of bacterial origin are considered to be of an albuminoid nature (Brieger and Fraenkel, Brieger and Boer, Etienne Burnett); it is possible, therefore, that hypochlorous acid may neutralize toxins by coagulating and eventually precipitating them.

[Tables are given showing results of injection intravenously of 10 c.cm. HClO solution on rabbits.

Diphtheria Toxin. Seven rabbits received 10 L.D. toxin subcutaneously. followed in three of them immediately, and again after 24 hours by 10 c.cm. HClO sol. intravenously [remained healthy].

Two others injected after 24 hrs. and 48 hrs.; and one after 24 hrs. and 72 hrs. [paralysis of legs after five days.] Control: death in less than 48 hrs.

Tetanus toxin. Four rabbits 0.1 c.cm. toxin subcutaneously. One injected after 24 and 72 hrs. [tetanus]. Two injected after 24 and 48 hrs. [healthy]. Control—tetanus.

Four rabbits 0.25 c.cm. after 24 and 48 hrs. [healthy]. Control—dead after four days.

Six rabbits 0.50 c.c. after 24, 48, and 72 hrs. [two dead after seven days; one after eight days; one after 11 days; one healthy]. Control—dead after four days.

Staphylococcus pyogenes aureus. Four rabbits received intravenously 50 million. One injected immediately and after 24 hrs.: two immediately and after 48 hrs. [healthy]. Control dead after 48 hrs.

Six rabbits received 100 millions. Five injected immediately and after 24 hrs. [four healthy; one dead after 10 days]. Control dead after 24 hrs.

Bacillus perfringens. Three rabbits received subcutaneously 50 millions, and were injected after 24 and 48 hrs. [healthy].

Four rabbits, 100 millions. Injected after 24 and 72 hrs. [two healthy: one dead after eight days]. Control—dead after 48 hrs.

CONCLUSIONS.

It has been found that in rabbits 10 c.cm. intravenous doses of a 0.5 per cent. HClO solution, even when repeated on two or three days in succession, produce no ill effects, that they may delay or prevent the onset of symptoms due to the injection of animals with diphtheria and tetanus toxins, and with cultures of *Bacillus perfringens* and *Staphylococcus pyogenes aureus*, the rabbits recovering from the infection or remaining healthy.

Hypochlorous acid intravenously administered is therefore to be regarded as of therapeutic value; the antiseptic apparently delays the development of bacteria and destroys their toxins, thus enabling the natural resistance of the animal to assert itself.

It is suggested that this destruction of toxins may be in the nature of a protein coagulation.—B.M.J.

"GIVING IT AWAY."—When the Ormskirk Tribunal met, the Chairman, Mr. F. A. Jones, narrated that at one of their meetings a conscientious objector, who said he was a Christadelphian, objected to the taking of life in any form whatever. After he was refused exemption, and on being told in the waiting room that his appeal had not been granted, he exclaimed, "Every one of the — lot of you ought to be shot."

Belfast Abattoir.

In a paper on the Belfast City Meat Supply, read before the Belfast Rotary Club, Mr. J. A. Jordan, M.R.C.V.S., said the new abattoir was the doctor's pet scheme as the first great step to the realisation of his ambition to obtain "pure meat and pure milk for the people of Belfast." The abattoir was undoubtedly an enormous improvement upon the old establishment, and though its financial working was as yet hardly as satisfactory as had been hoped, there was every prospect of substantial improvement in this respect within the next few years. Speaking of the methods of slaughtering oxen, he said that all the implements for merciful despatch of the animals had been obtained, including the humane killer advocated by the R.S.P.C.A., which he thought was the best yet devised. Many slaughtermen, however, still adhered to the pole-axe and hammer. Since the establishment of the new abattoir private slaughterhouses in the city had been closed, and last year 102,933 animals were slaughtered in the abattoir as compared with 1050 in the old abattoir the first year of its establishment in 1870.—*The Farmers' Gazette* (Dublin).

Unclean Milk.

At Bradford, on 10th inst., Lister Woodhead, farmer of 50 Smith Road, was fined 20s. for failing to exercise due diligence to prevent contamination. It was alleged that, although an inspector had pointed out to the defendant that the udders of two of his cows were defective, defendant had sold milk from these cows, and the samples showed the presence of pus, an inflammatory discharge which was liable to create serious illness in persons, especially young persons taking the milk. Defendant said he had never sold any of the milk from the defective cows, and maintained that the swelling on the udders had been caused by a bruise, and not by a cold. The lump had been three times as large as it was when the inspector saw it, but he (defendant) had got it down by constant attention. He had been at his present address for eight years, and had never had a complaint made against him before.

Warble Maggots—a suggestion.

When living in Egypt I kept a few smooth-coated greyhounds, which frequently got bitten by native dogs, and the wounds, if neglected, speedily became receptacles for the eggs of the common blowfly. When these reached the maggot stage, I found a touch of bluestone (sulphate of copper) an efficacious means of dislodging them. They lay in a circle, like the spokes of a wheel, heads inwards and exposed to the air, and the slightest touch of the caustic made them come tumbling out, rolling convulsively. Should the habit of the warble maggots be similar, no doubt a like treatment would get rid of them.—W. J. GARNETT, in *Field*.

A new way with rats.

That the exhaust gases from motor-cars in closed garages are asphyxiating is unfortunately too true (says the *Autocar*), but it is stated that a farmer in America, whose chicken house was infested with these rodents, attached a hose to the exhaust-pipe of a car and inserted the nozzle under the floor of the infested building. Twenty rats tried to escape, but were killed by the dogs, and later, when the floor was taken up, no fewer than 140 rats were found dead or stupefied.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, May 4.

REGULAR FORCES. ARMY VETERINARY CORPS.

Lieuts. to be Capts.:—T. J. Faithfull, H. C. Lowry, P. T. Lindsay, H. G. Tabuteau-Herrick, W. Halstead, P. B. Riley, R. F. Stirling, W. J. E. McKenzie, J. J. G. Keppel, A. S. Mathias, F. B. Sneyd, J. Rae, S. E. Holmes, D. R. Williamson, J. A. McMenamin, W. E. Phipps, R. Moore, F. Roche, R. S. Little, E. Sewell, G. C. Lancaster, J. G. T. Edwards, F. C. Minett, R. Daubney, M. G. O'Connell (Aug. 5); P. T. Saunders (Aug. 6); D. Marshall (Aug. 7); H. S. Cockburn (Aug. 8); E. H. Wyly (Aug. 11); L. A. Auchterlonie, C. J. C. Ryan (Aug. 18); H. J. Lowe (Aug. 19); R. Wooff (Aug. 24); H. L. Torrance (Aug. 27); J. Fox (Aug. 29); S. C. Rowbotham, D. C. Greene (Aug. 31); H. McC. Johnstone (Sept. 4); J. A. Ward (Sept. 7); S. Hunter (Sept. 8); J. J. Hegarty (Sept. 9); J. J. Dunlop (Sept. 10); W. McG. Mitchell (Sept. 11); M. F. O'Sullivan (Sept. 15); T. T. Taylor (Sept. 17); D. Blythe (Sept. 21); A. V. Nicholas, W. Kendrick (Sept. 28); W. H. Wortley (Sept. 29); G. A. Roberts (Oct. 2); R. C. G. Hancock (Oct. 9); S. H. L. Woods (Oct. 10); C. Tracy (Oct. 22); W. E. Footner (Dec. 2); R. J. Forrest, T. M. Mitchell (Dec. 23); P. D. Huston, C. P. Fisher (Dec. 24); G. Lloyd (Dec. 28); B. J. W. Nicholas (Dec. 29); C. R. Roche (Jan. 17); T. W. W. Wright (Feb. 1); J. O'Carroll (Feb. 9); M. Glynn, F. J. Shearman, A. Monro (March 1); E. J. Mulligan (March 9); H. B. Williams (March 26).

May 5.

To be temp. Lieuts.:—E. J. Lukey (Apl. 7); W. Sherriff (Apl. 17); J. A. Shannon (Apl. 18).

To be temp. hon. Lieuts.:—G. Hetherington, T. C. Huband, A. G. Miles, C. Young (Apl. 17).

May 6.

Temp. Lt. to be temp. Capt.:—L. D. D. Sewell (Apl. 16).

To be hon. Lieut.:—E. E. Scott (Apl. 17).

To be temp. Qmr. with hon. rank of Lieut.:—O. Preston (Apl. 28).

May 8.

Temp. Lts. to be temp. Capts.:—W. A. Potts (Apl. 14); D. Campbell (Apl. 20); C. J. S. Macara-Finnie (Apl. 25).

To be temp. Lieut.:—J. McR. Frost (Apl. 22).

May 9.

To be temp. Lieut.:—C. C. Parsons (April 25).

May 10.

Capt. (temp. Major) E. E. Parks relinquishes his temp. rank on alteration in posting (March 21).

Capt. E. E. Parks to be A.D.V.S. and granted temp. rank of Major whilst so employed (March 3).

Capt. (temp. Major) E. E. Seldon relinquishes his temp. rank on alteration in posting (March 31).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

May 5.

To be Lieut.:—S. R. L. Beaumont (May 6).

The King has conferred the following decoration:—

THE MILITARY CROSS.

Capt. William DeVine (Army Veterinary Corps.)

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds:—

P. Connolly, Lieut. A.V.C.	£1 1 0
C. Elphick, Newcastle-on-Tyne	1 1 0
G. Elphick, Lt.-Col. A.V.C.	1 1 0
H. S. Elphick, Capt. A.V.C.	1 0 0
C. H. Gollidge, Major A.V.C.	2 2 0
J. J. Hilliard, Capt. A.V.C.	1 1 0
G. H. Jelbart, Stow-on-Wold, Glos.	1 1 0
D. Keir, Capt. A.V.C.	1 1 0
H. Leggett, Middlesborough	1 1 0
Amount previously acknowledged	224 10 0
	£234 19 0

Personal.

ANDREWS.—On the 4th May, 1916, at Old College House, Lichfield, the wife of Major J. O. Andrews, A.V.C., of a daughter.

THE TAX ON MOTOR LICENSES.

Dear Mr. Codrington,

I raised your point to day in the House at question time. I got a flat refusal from Mr. McKenna to grant the reduction of the license to V. Surgeons as well as to doctors.

Since then I have seen the Financial Sec. to the Treasury, who has promised me that the matter shall be reconsidered.

I pointed out to him that V. Surgeons have to travel longer distances than doctors and that the war has made doctors busier and V.S. less busy in many places, and that they ought to be put on a par with them.

He was wholly sympathetic and is going to get a return from the Treasury to see how much the abatement to V.S. would cost.

I will keep my eye on the matter and do what I can, and am rather hopeful.—Yours,

A. RENDALL.

House of Commons, 12 April, 1916.

[Our correspondent hopes that other V.S. are invoking the sympathy and assistance of their respective Members of Parliament.]

THE A.V.C. IN THE MEDITERRANEAN.

Sir,—Reference: *Record* of Feb. 12th, 1916, page 364 Presidential address by Mr. J. Willett, M.R.C.V.S.:—

"I notice, and I daresay you all have, too, that not one of our men has been mentioned in despatches of the late G.O.C. Mediterranean Forces. Why this should be I don't know."

There was a hospital at Cape Helles from middle of May, 1915, until the evacuation, January, 1916.

Perhaps a question in Parliament by a M.P. might "meet the Speaker's eye," and discover why they did not?—Yours.

M.R.C.V.S.

ARE YOU STARRED?

What will be the position of fully qualified married veterinarians in private practice of military age under the new Military Act. Will they be exempt or not?

UNATTESTED.

A CORRECTION.

Marlborough Barracks,

Dublin, May 8th, 1916.

Dear Sir,—In your issue of April 22nd, 1916, my qualifications are incorrectly stated.

I should have been described as F.R.C.V.S., M.C.R.S.; L.R.C.P.; Capt. A.V.C.—Yours truly,

B. HARVEY MELLON.

Cruelty Cases at Tunbridge Wells—Lameness.

Before Alderman Symes and Mr. Beecroft at the Tunbridge Wells Borough Bench, Frank Davis was summoned for permitting a horse to be cruelly ill-treated by allowing it to be worked while in an unfit state in Eridge-road on 28th April.—Defendant did not admit the offence.

P.C. Davis stated that about 4.45 p.m. on Friday he saw a man named Griffiths driving a horse attached to a coal van. The animal was lame in the off-hind leg. The driver told witness he worked for Mr. Davis, of Little Common-road, Bexhill. The horse was examined by Mr. Roberts and witness took Griffiths into custody.

Mr. Charles Roberts, veterinary-surgeon, said the horse was suffering from a bad spavin. The hock was enlarged, and it was cruelty to work the animal. The horse was better after a rest, and as it was to be put under the care of a veterinary surgeon at St. Leonards witness did not think the horse need be destroyed.

Defendant said the horse was 13 years old and had never been lame until kicked on the near leg by another horse on the common.

The Chairman said he had seen the animal and it was not lame in the near leg where it was kicked.

Mr. Henry Jarvis, veterinary surgeon, of St. Leonards, called for the defence, and he could not agree with Mr. Roberts. The hock was coarse. He did not think the man, who was a "very decent chap," would be guilty of cruelty to any animal.

By the Chief Constable: He did not know that the defendant had been convicted four times for cruelty to animals in Sussex and once at Tunbridge Wells. He still thought the man was "a very decent chap," in spite of the convictions.

Mr. Roberts, re-called, said he thought it was merely a question of definition as to what was wrong with the horse. Recovery in such a case was doubtful, but the animal might be made fit again with rest and care.

The Chairman said the Bench had decided to adjourn the case for two months, during which time the horse must have care and rest. The Inspectors of the R.S.P.C.A. would see that the horse was kept under Mr. Jarvis's care.

Frank Davis was further summoned for permitting a horse to travel while in an unfit state on 29th April, and his son, George Davis, was summoned for travelling the horse.

Mr. R. Vaughan Gower appeared on behalf of the R.S.P.C.A.

Inspector Theobald stated that the animal in question was a black pony of which the younger defendant had charge in the London Road. The pony was very lame, suffering from a bad spavin. It was an old pony and had apparently been badly treated in the past.

Inspector Stenning corroborated, and Special Constable Fullagar also stated that the animal was in a very bad condition, and had undoubtedly suffered from ill-treatment and should be destroyed.

Mr. D. Reid Chalmers, a veterinary surgeon, said that he examined the pony. It was suffering from a very bad spavin. The condition was hopeless, and it ought to be destroyed.

The senior defendant said he was not the owner of the pony. The Inspectors of the R.S.P.C.A. lifted the leg right up, and when it was put down again the pony was lame.

Inspectors Theobald and Stenning were recalled and stated that the younger defendant told them the pony belonged to his father.

Mr. Chalmers also stated that he also heard the statement as to the ownership.

Davis, junr., denied these statements.

Another son gave evidence that his brother bought the pony.

Cross-examined, his brother was 16 years old, and had saved the money to buy the horse.

The Chairman said the case was a very bad one, and the father would be fined £2 and ordered to pay the veterinary surgeon's fees.—An order was made for the pony to be destroyed.

The case against the son was dismissed.

Lanoline and By-products of Wool.

The Australian Minister of Customs recently called attention to the waste of millions of pounds of lanoline from the numerous wool scouring establishments in the Commonwealth. The subject had previously been dealt with by Mr. J. Brownlee Henderson, Government Analyst of Queensland, who pointed out that lanoline existed in wool to the extent of 14 per cent. The German wholesale price for lanoline at that time—not the mixture of lanoline vaseline and water sold in collapsible tubes—was 11d. per lb., so that from this source a very large quantity of valuable material must have been thrown away in Australian wool scours.

"Personally," said Mr. Henderson, "I think there is certainly a fair margin of profit showing here. It is not at all likely that a process which is worked successfully and well known in Germany would cost a great deal more to work here, with such a store of raw material to hand."

Mr. Henderson also called attention to the presence of water-soluble potash salts in wool. From raw wool he showed that from 7 per cent. to 10 per cent. was obtainable without damaging the wool. In some continental countries it paid handsomely to extract the salts by washing the wool and evaporating the solution, but he thought that the evaporation could be much more cheaply accomplished in the dry air of Western Queensland than by artificial means in Europe.

An American view on Calf slaughter?

The following article is from *Hoard's Dairyman*. It will be noted that the writer ignores the question of the varying character of the foods fed to calves and older stock respectively.

"Veal is cheaper to produce than beef, for two principal reasons: First, larger gains are made in feeding young calves than in feeding more mature animals; second, veal is a by-product of dairying.

Experiments show that it requires one-fourth more feed to put 100 lb. fat on calves six or seven months old than on calves two months old. Feeders know that it requires more than twice as much feed to produce a pound of gain at the latter part of the feeding period as it does at the beginning. This, however, is somewhat balanced by the fact that the most valuable fat is laid on at the close of the fattening period.

The cost of gain, aside from the period of forced fattening, also increases with the age of the animal. From statistics covering 50,000 cattle of different ages, it is found that the daily gain in cattle at one-half year of age is 2.3 pounds; at 1½ years is 2.09 pounds; at 2½ years is 1.58 pounds; at 3½ years is 1.44 pounds; and at 4½ years is 1.2 pounds.

These figures show that a given amount of land and labour will produce more food in the form of veal than in the form of beef, and argues that a more economical way to increase the supply of meat is to raise as many calves as is possible and butcher them as veal rather than allow them to grow to maturity. Our pastures and fields will yield more meat by supporting a larger

number of animals and slaughtering them at an early age, than by feeding a smaller number to a more mature age.

The argument that if calves were allowed to grow to maturity instead of being butchered as veal we would have a larger supply of meat is an interesting bit of half-baked intelligence which has been preached quite extensively on account of the shortage of beef. As one writer, commenting on this intelligence, puts it, it is like saying that if builders would never stop work on any building until it is twenty or more stories high we would have a great deal more house room. The same type of ignorance is exposed in both arguments. No consideration is given to the fact that as the building is increased each succeeding storey costs more to build than the preceding, and as the calf grows, each one hundred pounds costs more than the preceding one hundred pounds.

It is true that if the calf were allowed to reach maturity it would yield more food than if butchered as veal. But since it must obtain its sustenance from the land, and since the older it grows the more food it requires to add a pound to its weight, it is plainly uneconomical to keep the calf until he reaches beefhood. The cheapest gains are made before the calf is six months old.

Electrical Destruction of Bacteria in Milk.

In the March number of the *Journal of the Board of Agriculture*, Mr. Frederick C. Lewis, F.C.S., assistant lecturer in bacteriological methods in the University of Liverpool, describes a new method for the destruction of bacteria in large volumes of milk by passing a suitable current of electricity through the milk during its passage through a tube connecting a container with a receiving vessel. The major portion of all bacteria in the milk is killed, and no chemical alteration in the milk so treated has been observed.

The results of bacteriological examination of treated and untreated milk appear to be very satisfactory. Judged from the standpoint of percentage reduction, the electrical method gave over 99.9 per cent., and from the standpoint of the presence of *B. coli* the results could not be improved upon.

Milk from a known tuberculous cow was passed through the electrical apparatus and a portion reserved

for inoculation tests. In no case did the animals inoculated with the treated milk show any signs of tuberculosis. Some of the animals inoculated with untreated milk died from septic poisoning, the result of bacterial impurities present in the milk. No deaths occurred in the animals inoculated with the milk after it had been treated, except in one case, and that obviously due to other causes. The next point is that this is accomplished without any alteration in the chemical constituents of the milk so far as can be ascertained by authoritative chemical analyses. There is absolutely no change in the taste of the milk. Expert dairymen (English and foreign) have been unable to distinguish, as regards taste, between treated and untreated milk. The enzymes or ferments in the milk are not destroyed by the electrical treatment.

A study of the table of results will show that, although the bacteria are very greatly reduced in numbers, the milk is not sterilised in the strictest sense. Many groups of bacteria are always wholly destroyed, e.g., the *B. coli* group, but certain other groups appear to contain a few individual members which are highly resistant to the electrical action. These few remaining organisms will, therefore, ultimately produce changes in the milk, but these changes are always much delayed. Even in the hottest weather in England the milk is perfectly fresh for three or four days after treatment. The change which ultimately takes place is a mild, pleasant, acid reaction and flavour. The putrefaction which is noticeable so often in stale "steam sterilised" milk has never been observed. This is of considerable importance, not only from an agricultural point of view, but also from the standpoint of infant feeding.

Now so-called pure-culture ferments are being extensively used in the butter and cheese making industries, and milk treated by this electrical process is a perfectly suitable medium for the action of culture ferments. This has been proved upon several occasions in the laboratory, and also in a special series of experiments made independently in an English margarine factory, where most of the trade ferments were available.

Samples of the treated milk were also submitted to a butter manufacturer, who tested their butter-forming characteristics. His report was that the milk was perfectly satisfactory, both as regards the quality and quantity of butter obtained from it.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)			(a)	
Gr. BRITAIN.											
Week ended May 6	11	13					37	71	2	138	495
Corresponding week in											
1915 ...	15	17			1	1	‡30	‡ 75	4	98	466
1914 ...	19	20			1	1	34	56	1	108	1246
1913 ...	9	13			3	4	55	109	2	78	1797
Total for 19 weeks, 1916 ...	251	294	1	24	21	62	1271	3010	169	1784	5632
Corresponding period in											
1915 ...	300	334			12	17	‡253	‡601	148	1490	6555
1914 ...	356	380	11	74	35	81	1173	2111	140	1380	14094
1913 ...	251	273			64	208	1350	2802	114	826	11895

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.
Board of Agriculture and Fisheries, May 9, 1916.

† Counties affected, animals attacked :—
Excluding outbreaks in army horses.

5000



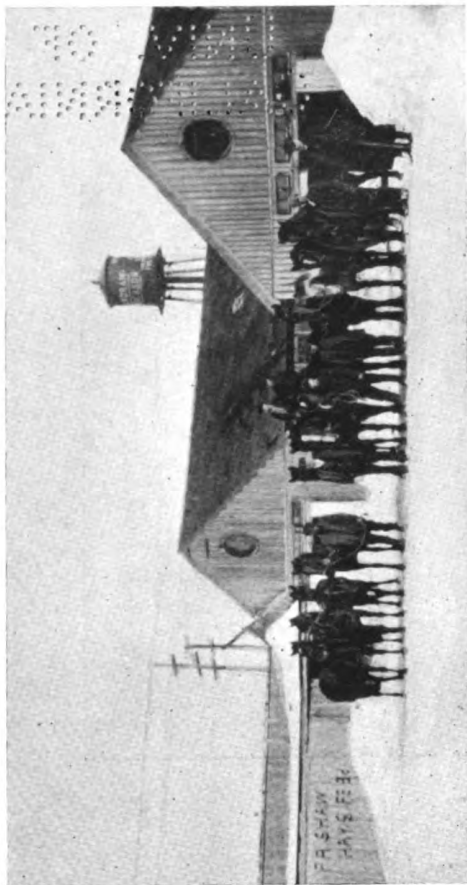
FRACTURE OF OLECRANON PROCESS IN A HORSE.

Five fragments of the process have been pieced to the bone to obtain photo, three small fragments are missing.

To illustrate note by Mr. J. Fox, M.R.C.V.S.

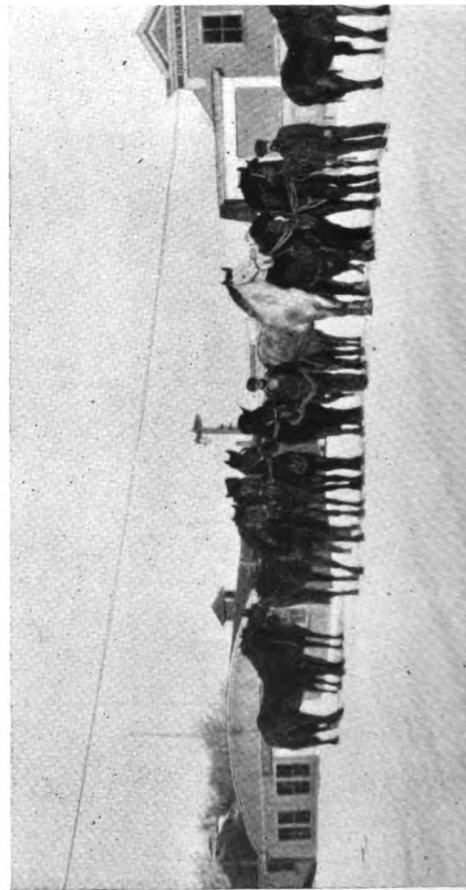


Veterinary Hospital—a "Dugout."
In North America, March 1916.

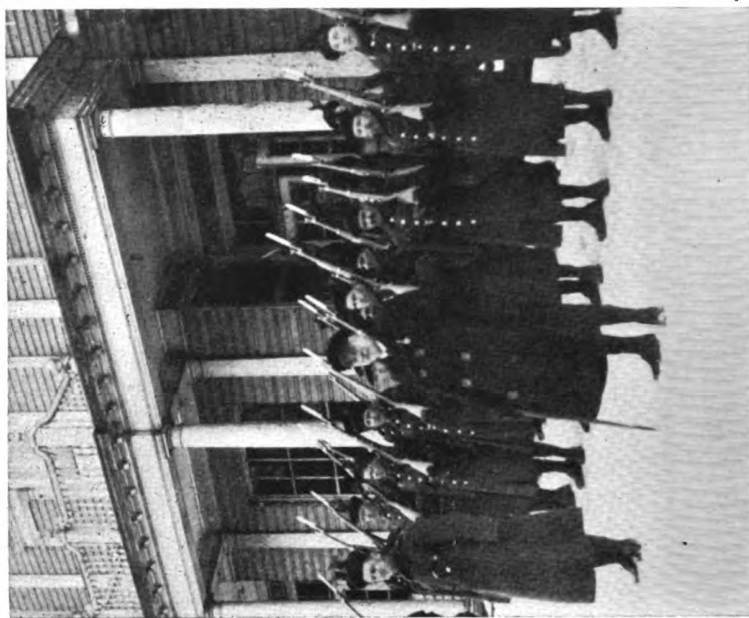


2.

2. Some horses, and the O.C.



- 3. Horses at Exercise.
- 4. The O.C. (Mr. John Blakeway) and the Depot Guard.



THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1454.

MAY 20, 1916.

VOL. XXVIII.

CAMEL DISEASES.

Lieut. Gibson's note upon camel diseases and camel physiology is of intrinsic interest, and is also welcome on account of the rarity of contributions on the subject. Too little has been written upon camel diseases by English veterinarians. Quite a number of our members have experience—in some cases considerable experience—of practice amongst camels; but there is hardly any record of it in our professional journals. This is regrettable for several reasons; and as an exceptional number of members are now seeing some camel practice perhaps some of them may be induced to do a little to lessen the deficiency of its records. There are many special problems in connection with both specific and sporadic diseases of camels—with regard to the latter, for instance, the marked anatomical differences between the digestive tract of the camel and that of other ruminants suggest a line of enquiry not devoid of possibilities. But, apart from details, there is a broad general reason for desiring more communications on the subject. Camel diseases form a quite distinct department of veterinary science—a minor one, perhaps, if veterinary work is surveyed widely, but none the less a very important one in some parts of the world.

THE "MANCHESTER SOCIETY."

The report which we publish to-day shows that this Society is still quietly pursuing its useful work, the necessity for which has by no means been removed by the war. The officers' account of their stewardship is satisfactory in every respect but one—the small membership roll. It has always been incomprehensible why so few of the profession should belong to the "Manchester Society." Its Benevolent activity should appeal to everyone; though here it is true that the Society is not unique. But in its primary function it is unique—it is the only Veterinary Defence Society in the kingdom, and very many of us would find it useful some time. Few veterinary surgeons spend a dozen years in independent practice without being at least threatened with legal proceedings; and probably a large proportion of practitioners have known what it is to settle a claim rather than face a law suit. In settling and defending claims alike, the "Manchester Society" does good service; and it deserves a far better membership than the present one—well under one-tenth of the profession.

MOTOR CAR LICENSES.

The notice which appears on p. 524-5, has been prepared for issue with the voting papers to Members on the 24th inst. But it is possible that

the Finance Bill will be taken before that date, and we are asked by the President to give advance publication to the notice, so that members may have an earlier opportunity of communicating with their parliamentary representatives.

NOMINATIONS TO COUNCIL R.C.V.S.

The final date for nominations (May 17) is now past, and we give the names of the candidates. Nine members are to be elected, eight to fill the rotation vacancies, as usual, and one in place of the late Principal McCall, for three years. Under the Supplemental Charter of 1914, the ninth in order of votes will occupy the "occasional vacancy," or in event of a tie for this place, the one of the two whose name has been longest on the Register.

W. Burt	R. Pringle
J. Clarkson	J. T. Share-Jones
F. W. Emery	H. Thomson
F. W. Garnett	R. C. Trigger
A. Gofton	P. Wilson
J. M'Fadyean	

The three new candidates are Mr. F. W. Emery, Belfast; Mr. Arthur Gofton, Edinburgh; and Mr. P. Wilson, Lanark.

FRACTURE OF OLECRANON PROCESS OF ULNA.

Subject. Six-year-old well bred light draught gelding.

The animal was reported as kicked during the night. On examination I found three small wounds on the outside of the forearm which did not cause lameness, so that animal went to work as usual. Next day when being taken to water the animal exhibited such great lameness that it was decided to water on lines.

On seeing animal again I found him standing squarely on all legs and to outward appearances in no pain. On movement, the affected leg was carried, the shoulder and elbow joints being fixed.

On manipulating the leg—which showed only slight swelling at seat of wounds—very little could be noted, and it was only by having the limb flexed and carefully examining the point of the elbow that I diagnosed fracture of the olecranon process. It was exceedingly difficult to demonstrate crepitation.

Post-mortem showed the olecranon process broken in several parts.

I enclose pieces of the bone.

J. Fox, M.R.C.V.S.

April 25.

PERITONITIS AND TRAUMATIC PERICARDITIS IN THE CAMEL.

On Sunday, 16th April, it was reported to me that one of the camels under my charge had died quite suddenly, at 2.30 p.m. that afternoon.

Upon enquiries I learned that the camel had been feeding as usual, and doing his work, which consisted in carrying forage to the lines of Artillery horses. He was sent out to graze the previous afternoon in company with about 40 others, the grazing area being known to me, and consisting chiefly of a species of sharp spiked thistle, similar to *carduo calcitrapa*, which seems to be eaten by camels with some relish; the natives in charge consider this herbage to be most excellent for their animals.

The officer in charge of this camel corps is very observant, with considerable experience of the care and working of these animals, quick at detecting anything from the normal in their habits: he assures me that up to the afternoon of 16th April, he noticed very little amiss with this animal; and as the camel was one of the best in his batch, he was the more anxious to know what had been the cause of death. We accordingly made arrangements for a P.M. examination to be held on the morning of 17th April.

The subject was a well-nourished male camel, aged five years. The carcass was distended in the abdominal region. Upon skinning and perforating the left flank a considerable quantity of claret-coloured serous fluid exuded, and on a lineal incision being made in the median line, a similar fluid was revealed in the abdominal cavity (two galls., at an estimate) in which floated a good deal of lymph flakes, part of which was adherent to the visceral peritoneum of the rumen, etc. This region of the digestive tract was of a dark red colour, and showed signs of acute inflammation.

Upon opening the stomach it was found full of ingesta, *e.g.*, native hay, millet, *dari*, and the mucous membrane in a normal condition.

The liver, of the many lobulated variety, showed signs of fatty degeneration; the spleen, kidneys, and bladder apparently quite normal.

A dark red area of congealed material was noticed near the oesophageal entrance to the rumen, traced through the diaphragm to the pericardium, which contained about one pint of claret-coloured fluid of the same nature as the peritoneal effusion.

The whole P.M. conditions pointed to the action of a small foreign body, which was found in the shape of a wire nail perforating the right auricle of the heart; this had probably been picked up in the food, as the animals are fed from small square boxes when in their own lines. A peculiarity of camels appears to be their marvellous insusceptibility to pain, for surely one can scarcely imagine more excruciating agony than is experienced in like cases of traumatic pericarditis in other ruminants, *e.g.*, cattle.

We have been particularly interested in the action of that "bladder-like" arrangement called the

"palu," which is frequently protruded from the mouth of the camel: emitting a peculiar gurgling sound, and usually thrown out suddenly to the left side.

This apparatus is supposed to act in moistening the mouth to abate thirst—a very useful adjunct, no doubt, and one in which the camel certainly scores over the human species in these desert zones, but we cannot help but think that this ingenious structure serves a still further purpose in aiding in the very complicated process of digestion.

We were under the impression that the action of this organ was to fill with water, etc., but from observation and examination at the few autopsies we have had the privilege to make, we are of opinion that the "palu" exercises some peculiar "suction-like action," drawing the mucus and watery elements from one compartment of the stomach (rumen, where are situated several fairly large mucus sacs) along the oesophageal groove to another (abomasum or true digestive stomach) and by moistening and uniting with the ingesta (to which it adds the mucous secretion) aids digestion as required.

We should be glad of the opinion of those more versed in these matters.

HERMANN GIBSON, A.V.C.

B. M. F.

MILK FEVER (?).

I read with interest the case recorded in last week's *Veterinary Record*, *re* the above, and in my opinion it was undoubtedly a case of what is commonly called milk fever.

I am sure a greater fallacy never existed than that milk fever only attacks cows immediately before, or shortly after, calving.

I constantly have cases of cows showing distinct symptoms of milk fever which are calved from two to six months, and I always treat them with the modern treatment for milk fever, with the most gratifying results, and would strongly advise any practitioner who has not done so before to try it. As to the cause of cows being affected so long after parturition, although I have my own opinion, it is a debatable question, and would take up too much time and space to enter into thoroughly.

The important point to our clients is the recovery of the patient, and I am sure by acting on the same lines as Mr. Knowles has so plainly recorded, the same happy result will follow.

Dunolly.

JAMES M'DOUGALL, M.R.C.V.S.

Having read Mr. Knowles' article in last week's *Veterinary Record*, I am recording a case of a somewhat similar nature which I have just had; but unfortunately mine died eventually.

Subject. An Alderney cow, had four calves, the last born September 15th, due to calve again August 18th. On Wednesday morning the 10th inst., I was called at 6.20 a.m., as she was blown and staggering about.

On arrival I learned she had been turned out day and night on an ordinary pasture where there is an abundance of grass, but had now been got into a

loose box. She was blown on the left side only; eyes staring, and reeling about. I gave her some Ol. Tereb. and Spts. of Ammon. aromat. in oil—not an easy matter, owing to her difficulty in standing. About five minutes afterwards she went down, and thinking she would become more tympanitic I punctured the rumen. I now left a purgative drink to be given in an hour's time, saying I would see her again in the afternoon.

About noon I received an urgent message to attend again, and arriving about an hour later my client met me saying he thought she would soon be dead, had not passed any dung, and wanting to know how long the aperient drink would take to act, etc. I now found her unconscious, head turned round to her side, pulse 140, temperature 99.4, ears cold. I came to the conclusion I had a case of Milk Fever to deal with, so went home to get the necessary things and then inflated the udder. I saw her again in the evening: found consciousness returning, and she managed to drink half a pail of water. I gave her some whiskey and water as a drench.

Thursday. Found my patient better; temp. 101, pulse 90, holding up her head, and during the day ate some short food and a little hay; bowels now acting, urine normal in appearance. As she did not attempt to turn herself over I had her turned every four or five hours. Left drinks containing Ammon. carb. and Nux vomica.

Friday morning. Condition about the same: continued the drinks. In the afternoon, however, she was not so well, and began to turn her head round to her side again; moaned occasionally. I again inflated the udder. Saw her again during the evening, when she was better and ate a little grass.

Saturday evening. Cow ate some hay, cake and grass, and during the early hours turned herself over for the first time.

During the afternoon she got up of her own accord, passed a lot of urine, and when I visited her in the evening, stood chewing her cud as if nothing had ever ailed her.

Sunday. Feeding, chewing her cud. No medicine given.

Monday morning. Cowman brought word she was not so well; would not touch any food. Having an appointment, and thinking there was no urgency in the matter, I sent a similar drink to what she had been having, saying I would see her later on. Much to my surprise and annoyance, on calling at 1.30, I found she had died an hour previously.

At 4.30 I made a P.M., but could find nothing to account for her sudden collapse. The blood throughout the carcass was quite fluid and showed no signs of clotting. In the bladder there was a certain amount of cystitis, and the urine in it was of a green colour.

I might say another cow and a six-months-old calf were, and are at the present time, living under exactly similar conditions to those of my patient.

F. B. O. TAYLOR, M.R.C.V.S.

Stratford-on-Avon.

Mr. Knowles' report of a case of Milk Fever occurring four months after calving, although interesting, is by no means the longest period after parturition at which the disease may appear.

I met with a case last June, the cow having calved six months previously. When I saw the cow early in the morning she was down, stretched out; and almost comatose. I learned she had been to the bull the day before, and enquired if she had received any injury during service, and was told not. I then came to the conclusion it was a case of Milk Fever, and treated her with injection of the udder. No medicine was given by the mouth. She was up and all right again in two hours.

Is it possible that some change takes place in the udder during oestrus, as, undoubtedly there is a falling off in the quantity of milk during the period.

Monaghan.

T. E. LOUGHRAN.

ABSTRACTS FROM FOREIGN JOURNALS.

GASTRIC ULCER IN CALVES.

Gastric ulcer is very rare in adult cattle, in which it may always be connected with infective diseases or with poisoning. On the other hand it is common in calves, in which its cause still remains unknown. Both in veterinary and in human pathology Virchow's theory has been predominant, according to which the ulcer should be attributed to an arrest of the sanguineous circulation by embolism or thrombosis and to the subsequent necrosis permitting autodigestion of portions of the mucous membrane. Other authors blame an excessive acidity of the gastric juice, which transforms very slight lesions of the mucous membrane into ulcers.

Experiments undertaken to confirm this theory have given negative results; while, in many cases of gastric ulcer in man, a degree of acidity inferior to the normal has been found.

Bougert some time ago made numerous investigations upon gastric ulcer in calves slaughtered at the Berlin abattoir, and published the results (*Zeitschr. für Fleisch—und Milchhygiene*). He remarks first that it must be admitted that gastric ulcer in animals and in man respectively may be of quite different etiology, and adds that analysis of the gastric juice of calves affected with very severe ulcers have demonstrated a degree of acidity lower than that of the gastric juice of calves with the abomasal mucous membrane perfectly intact. Bougert thinks that gastric ulcer in calves is traumatic in origin and arises at the time of weaning, which takes place as a rule between the fourth and sixth weeks after birth. At this age true rumination has not yet commenced, and the maceration of the food which physiologically pertains to the rumen is performed by the abomasum instead. Coarse foods, such as hay and straw, reaching the abomasum insufficiently elaborated, provoke hæmorrhagic erosions near the pylorus. These erosions are superficial at first, and then gradually become larger and deeper. The narrowness and shortness of the

passage between the pylorus and the duodenum in calves predisposes the mucous membrane to injuries from the food. In adult cattle, on the other hand, the fourth stomach assumes almost the form of the intestine near the pylorus, and is continued insensibly into the duodenum. This disposition facilitates the passage of food, even if insufficiently elaborated.

Bougert gives the following details of his extensive slaughter-house observations.

In 300 calves, aged from one to three weeks, only one intact stomach was found.

Of 320 calves, aged from four to five weeks, 258, equalling 89.62%, presented ulcerous lesions in the vicinity of the pylorus.

Of 160 calves eight weeks old, 152, equalling 95%, presented lesions of the abomasal mucous membrane, two of which penetrated as far as the serous membrane, and two had caused complete perforation.

Of 160 calves aged from ten to twelve weeks, 153, equalling 95.62%, presented stomach lesions, two of which extended to the serous membrane, and one of which had perforated the entire wall. Many cicatrices, evidently due to healed ulcers, were also found.

Of 200 calves aged from 12 to 14 weeks, 196, equalling 98%, were affected with ulcerous lesions of the stomach, four of which were undergoing cicatrization.

In 200 cattle aged from six months to two years, no ulcerous lesions were found, but it was easy to see that such had existed at an earlier age, from the cicatrices that were observed in the vicinity of the pylorus.

Having made accurate bacteriological researches upon the question, Bougert observes that the total condemnation of carcasses of calves affected with perforating ulcer of the stomach is not justified, for such lesions do not always cause septic peritonitis. In one case in which the ulcer had caused a diffuse peritonitis, the flesh did not contain microbes. The flesh of calves affected with diffuse peritonitis, in which the whole extent of the serous membrane is turbid and reddened, should be condemned; while in those which present localised lesions corresponding to the perforated point, the removal of the abdominal organs and of the other parts involved is sufficient.—(*La Clinica Veterinaria*).

THE CRURAL ATROPHY IN HAEMOGLOBINURIA.

According to Ries the crural triceps is not the seat of any pathological lesion in haemoglobinuria, but undergoes the atrophy of inaction (*Bullet. de la Soc. Cent. de Méd. Vét.*). The primary haemoglobinuric alterations may extend to it in exceptional cases; but the author has never seen them do so. The pathological process is otherwise. Either the primary myositis affects the lumbar muscles and the muscles of the croup, and thus produces the well-known muscular hardness, difficulty of progression, renal colics, etc., or the aforesaid muscles are attacked at the same time as the psoas muscles, and then paraplegia of one or both limbs is observed, or one or both of the psoas muscles are mainly or almost solely affected.

So far as the crural atrophy is concerned, the author believes that the initial lesion which causes it is in the psoas muscles. The anterior femoral nerve is bathed, compressed, and perhaps intoxicated by the exudates, and is also pressed upon by the organisation of these and by the cicatricial reaction. The crural triceps, thus cut off from nervous influence, undergoes the atrophy of reaction.—(*Revista de Higiene y Sanidad Veterinaria*).

LAMINITIS FROM SUPER-PURGATION.

Löer, of Vieselbach-in-Thür, has recorded this case. The subject was a four-year-old horse of Danish breed, who had been under unqualified treatment for colic. As the pain was increasing, repeated doses of purgatives had been given at short intervals in solution; and altogether the horse had received about 100 grammes (= a little over 3½ oz.) of aloes in addition to various doses of Glauber's salts.

Löer saw the horse the next day. Vigorous peristaltic sounds were present, the conjunctivæ were bright red and violently injected, the respiration was increased in frequency, and the pulse was weak. The temperature verged upon 103.3° F. There was complete failure of appetite, a tottering gait, and fluid, stinking, diarrhoea.

After treatment for three days with Priessnitz poultices, astringents, and stimulants, the horse showed a substantial improvement. The symptoms mentioned above had either disappeared or were markedly lessened; the temperature was normal again, and the appetite was increased. About ten o'clock on the evening of the third day the owner looked at the horse, and saw nothing wrong. Another inspection two hours later showed that complete lameness of the fore limbs was present. Laminitis of both fore feet was diagnosed.

Treatment followed ordinary lines; except that, on account of the great weakness of the horse caused by the aloes-poisoning, venesection was not practised. Recovery was complete after fourteen days' treatment; and no subsequent deformity of the hoof was observed.—(*Berliner Tier Woch.*).

[German veterinarians bleed much more frequently than Englishmen, and usually do so in laminitis.—*Transl.*] W. R. C.

Royal College of Veterinary Surgeons.

MOTOR CAR LICENCES.

Arrangements have been made for the following amendment to be moved to the Finance (No. 2.) Bill:—
To add the following Clause after paragraph 11 of the Finance (No. 2) Bill:—

"For the purpose of giving Veterinary Surgeons an allowance or repayment of half the amount of the duties for licences on motor cars, paragraph 4 of Section 86 of the Finance (1909-10) Act, 1910, shall be read as if the words "or duly qualified Veterinary Surgeon" were added after the words "duly qualified Medical Practitioner."

Members are urgently requested to communicate with their Parliamentary Representatives, asking their support when the amendment is moved. A draft specimen letter is given below :—

To.....M.P.

Sir,

I beg to call your attention to the fact that an amendment is being moved to the Finance Bill by Mr John O'Connor, M.P., providing for a rebate or repayment of half the licence duty on Motor Cars used by Veterinary Surgeons for professional purposes. This rebate was provided for the Medical Profession in the Finance (1909-10) Act, 1910, but no such privilege was granted to the Veterinary Profession. It is obvious that it is very important in the interests of live stock, that Veterinary Surgeons should be able to get to their patients as quickly as possible, and to this end that they should adopt the speediest means of transit.

The Chancellor of the Exchequer recognised the force of this contention in the debate which took place in the House on October 19th, 1915, when he accepted an amendment to the Finance (No. 2) Act, 1915, providing for the extension to Veterinary Surgeons of the same rebate on *Motor Spirit duty* as was granted to Medical Practitioners. The profession now asks for the same treatment with regard to the Duties for Licences on Motor Cars.

Almost every Veterinary Surgeon now in practice in this country is doing duty for some colleague absent on active service, in addition to his own practice, and the area to be covered is consequently so much greater that it would be impossible to do the work at all without a motor car.

I earnestly hope that you will recognise the justice of this appeal, and that when the amendment referred to is moved, you will be prepared to give it your hearty support.—Yours faithfully,

DONATIONS TO R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds :—

A. H. Andrew, Ware	£1	1	0
Dr. O. C. Bradley, Edinburgh	1	1	0
A. C. Duncan, Capt. A.V.C.	1	1	0
W. W. Golding, Hertford	1	1	0
H. C. Jagger, Capt. A.V.C.	1	1	0
J. M. Knighton, Lieut. A.V.C.	1	1	0
J. E. Miller, Harwich	1	1	0
E. P. Owen, Thame	1	1	0
J. F. Rees, Carmarthen	1	1	0
F. J. Richmond, Capt. A.V.C.	1	1	0
J. S. Young, Wallington	1	1	0
Amount previously acknowledged	234	19	0
	£246	10	0

FELLOWSHIP DEGREE.

An Examination for the Fellowship Degree was held at the Royal College on May 13th, when the following candidates were successful :—

Under the old Regulations :—

John Wright Conchie, Kidderminster.

Thesis : "Swine Fever."

George Yates, Harrow. *Thesis : "A few diseases affecting the dog, encountered in every-day canine practice."*

The Examiners were : Professor J. Macqueen, Messrs. J. Malcolm and W. Woods. Chairman : Mr. W. J. Mulvey.

Under the new Regulations :—

S. H. Gaiger, late I.C.V.D. *Thesis : "Notes on Surra and our present position as regards treatment,"*

Examiners : Colonel F. Raymond, Mr. A. L. Sheather
Chairman : Mr. W. J. Mulvey.

S. L. Slocock, Capt. A. V. C. *Thesis : "Necrotic and Gangrenous wounds, their causes and treatment in the Field."*

Examiners : Professor J. Macqueen, Mr. W. Woods
Chairman : Mr. W. J. Mulvey.

FRED BULLOCK, Secretary and Registrar

WAR EMERGENCY EXAMINATION.

A Special Examination for students in Class D was held on the 3rd and 4th May, in London, three candidates from Dublin and four from London having entered. The Dublin candidates were unable to be present. Only one candidate was successful, namely : Mr. Allan Temple, Royal Veterinary College, London.

FRED BULLOCK, Secretary and Registrar.

NOMINATIONS FOR ELECTION TO COUNCIL

Name	Address	Proposers
Burt, W., Brighton	Sir S. Stockman, W. J. Mulvey	
Clarkson, J., Leeds	A. E. Mettam, T. S. Price	
Emery, F. W., Belfast	J. J. Ross, H. McConnell	
Garnett, F. W., Windermere	A. E. Mettam, T. S. Price	
Gofton, A., Edinburgh	F. T. G. Hobday, Hugh Begg	
M'Fadyean, J., London	F. W. Garnett, W. J. Mulvey	
Pringle, R., London	Sir S. Stockman, T. S. Price	
Share-Jones, J. T., Liverpool	J. W. Brittlebank,	
	G. H. Locke	
Thomson, H., Bedford	Sir S. Stockman, A. E. Mettam	
Trigger, R. C., N'castle, Staffs.	J. Malcolm, W. Pauer	
Wilson, P., Lanark	Dr. O. C. Bradley, F. W. Garnett	

TENTH INTERNATIONAL VETERINARY CONGRESS, 1914.

MEETING OF EXECUTIVE COMMITTEE.

A meeting of the Executive Committee of the Congress was held at 10 Red Lion Square, W.C., on Friday, 14th April, when the following members were present :— Sir John M'Fadyean, in the Chair; Messrs. G. A. Banham, F. W. Garnett, H. A. MacCormack, T. S. Price, F. Bullock, and Sir S. Stockman (Hon. Secretary).

Minutes. The minutes of the previous meeting were read and confirmed.

Report of Publication Committee. The Publication Committee, consisting of Sir John M'Fadyean, Sir Stewart Stockman, and Mr. Fred Bullock, reported that they had prepared and issued the Proceedings of the Congress in three volumes. These had been posted to all members except those residing in Belgium, Germany, Austria, Bulgaria, Servia, etc.

Insurance. The HON. SEC. reported that the Insurance Company had repudiated liability for any loss occurring through the abandonment of the Congress.

It was resolved that no further action be taken.

Treasurer's Statement. Mr. GARNETT submitted a statement of accounts up to date and certified as correct by the Auditors. He pointed out, however, that there were still further liabilities, and it was therefore resolved that the publication of accounts, as is required by By-law 49, be deferred for the time being.

At this point the President requested Mr. Bullock to withdraw. During his absence it was resolved that an honorarium of £100 be granted to Mr. Bullock for his

services since the beginning of August, 1914. Mr. Bullock was then admitted, and was informed of the resolution of the Committee, Sir John M'Fadyean explaining that the honorarium was granted in consideration of the valuable services which Mr. Bullock had rendered the Committee in preparing the reports of the Proceedings, in seeing the volumes through the press, and in despatching the same to the members.

The question of the disposal of the funds in hand was considered, and it was resolved that the funds be left as at present, namely, on deposit at the Bankers in the names of the two Trustees.

THE NATIONAL VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY.

The annual meeting was held at the Grand Hotel, Manchester, on Wednesday, 19th April, the President, W. A. TAYLOR, Esq., in the Chair. There were also present: Maj. Brittlebank; Messrs. Clarkson, Hopkin, Lawson, Locke, Lloyd, McKinna, Michaelis, Munro, Stent, Sumner, Wolstenholme, Woods.

Apologies for absence were received from Messrs. Heelis, Jackson Young, Garnett, Shipley, Lindsay, Hughes and McCallum.

The minutes of the last annual meeting were taken as read. Proposer, Mr. Wolstenholme; seconder, Mr. McKinna.

PRESIDENT'S ADDRESS.

Mr. W. A. TAYLOR, F.R.C.V.S., Manchester.

In pursuance of the rules of the Association, it is, I suppose, incumbent upon me to address you in the form of President's Address. I think, under the present circumstances, and particularly in view of the business to be transacted, I shall be wise if I elect to make very few remarks. I have to inform those gentlemen who have not attended any meeting since the annual meeting was held in 1914—last year no annual meeting was held, owing to the war—that the officers remained in office, and I hope that that infringement of the Society's rules and regulations will meet with your approval.

I do not know that very much business in the "Defence" Branch has been transacted, but one unfortunate case arose which perhaps some of you saw in the papers with regard to the prosecution of a veterinary surgeon for failing to report the existence of suspected swine fever. This case was considered by your Council, and certain action was taken in the matter and certain assistance rendered to a member of this Society against whom the action was laid. I am pleased to be able to report that the verdict declared by the magistrates was in favour of the defendant. I do not know that I can make further allusion to the matter. Other actions at law have been threatened against veterinary surgeons and one or two minor claims have been settled by your Council.

The Benevolent portion of the Society's activities is gradually increasing, and I am pleased to be able to state that the funds at our disposal have been sufficient to enable us to render assistance where assistance was required. We could produce, if desired, many letters of thankfulness for the grants made by this Society, showing that though very little is published with regard to the importance, if I may so term it, of charity, the Society is doing in a silent way a very good work, and I hope that in future it will be as successful as it has been in the past. As the Secretary and the Treasurer have reports to present, I will ask you to excuse me from dilating further upon any matter in connection with the Society.

SECRETARY'S REPORT.

Owing to the Hon. Sec., Mr. G. H. Locke, being out of the country, the Hon. Treasurer has carried on the duties over a portion of the time.

The number of members at the end of the year 1913 was 273, and at the end of 1915 it was 259, showing a decrease of 14. These figures are accounted for by the accession of 13 new members, whilst on the other hand, 18 have resigned or died, and nine have been struck off for non-payment of subscriptions.

Amongst those who have resigned is Mr. R. Reynolds, of Liverpool, whilst amongst the deaths there appear the names of Messrs. William Hunting, H. Ferguson, C. Hartley, C. Elam, and A. L. Butters.

In defending or in settling actions brought against our members the sum of £42 12s. 6d. has been paid. There have been several other actions threatened, but they have not been pressed. One of these cases is that in which an action was threatened by the vendor of a horse against a veterinary surgeon for giving a certificate of unsoundness, and the horse was afterwards passed by another veterinary surgeon as being sound.

TREASURER'S REPORT.

Mr. J. B. WOLSTENHOLME: The two years which have passed have steadily improved our financial position, as the balance sheets which have been issued make clear. The Defence Fund has once again reached the sum of £1000, and accordingly, the sum of £400 will be transferred to the Benevolent Fund, and duly invested.

During the year 1914 the amount granted from the Benevolent Fund was £135 5s. 0d., and during 1915 it was £147 17s. 6d. These two amounts have been paid to 14 recipients, only two of whom have been contributed to by deceased members. I feel that the whole of the cases are deserving, and I am satisfied that the amount disbursed has afforded relief which is very helpful and highly appreciated.

I have now held the office of Treasurer for ten years, and have taken over the Secretary's work for one year, and feel that, as I stated two years ago, I must now ask to be relieved from the labour and responsibility of the position. I would wish to place on record my appreciation of the kindness and helpfulness of our President, as well as that of the Secretary, and the uniform courtesy which has been extended to me by the whole of the members of the Society, whether in personal contact, or in written communication only.

Mr. LLOYD moved and Mr. MICHAELIS seconded that the balance sheet as presented and audited be received and adopted.

Rule No. 10. Notice of motion by Mr. Hopkin—that Rule 10 of the Benevolent Fund be altered to read, "Interest or income for benevolent purposes, if not expended in current years, to be available for distribution later at the discretion of the Council, and not of necessity added to capital."

Mr. HOPKIN drew attention to the balance sheet which shows that the income last year was £198, and the expenditure £147. For some years the money that has not been spent has accumulated until it has now reached the sum of £578. According to the rules of the Society, this money could be used only for investment, and the income arising from the investment used for benevolence. He thought the time had arrived when their benevolence should be more liberal, and the demand would probably be greater after the war.

Mr. SUMNER said the Council might now feel the desirability of making grants, as in the case of the Hunting Memorial, but had no power to do so.

Mr. LLOYD asked whether, supposing the expenditure under the Benevolent Fund had exceeded the £198 income, would it have been taken out of the £578?

Mr. LOCKE replied that such a position could hardly arise, as the income was known and expenditure was kept within it.

Mr. SUMNER wished to know whether the whole of the income of the Benevolent Fund must go to meet the necessities of veterinary surgeons and their dependants? He mentioned the Anglo-Franco-Belgian Relief Fund, and said that the rules did not appear to admit of a contribution being granted.

The PRESIDENT said that having received the appeal for the Relief Fund, he felt it to be his duty to bring the matter before the meeting. Before voting a sum of money, however, they should first decide whether legally they had power to do so. Personally, he doubted whether they had such power.

After some little discussion it was resolved:—"That the Secretary be instructed to obtain legal opinion as to the power of the National Veterinary Benevolent and Mutual Defence Society to contribute to the Anglo-Franco-Belgian Veterinary Relief Fund, and subject to this opinion being satisfactory the Council be empowered to act."

The Secretary was authorised to get the rules reprinted if and when required.

ELECTION OF OFFICERS.

President. Mr. Hopkin proposed that Mr. Taylor be re-elected. Mr. Clarkson seconded. Carried.

Mr. Taylor, in again taking the chair, thanked the meeting for the honour conferred upon him, and hoped in the future, as in the past, to place his best services at the disposal of the Society.

Vice-President. Mr. Woods was re-elected. Proposer, Mr. McKinna; seconder, Mr. Stent.

Treasurer. Mr. McKinna suggested that, in view of the fact that Mr. Wolstenholme had decided to resign, they should appoint Mr. Locke to the dual position of Treasurer and Secretary. Major Brittlebank seconded.

Council. The President announced the receipt of a letter from Mr. Shipley expressing a wish not to be re-elected on the Council. The retiring members were re-elected, with the exception of Mr. Shipley, whose place will be taken by Mr. Wolstenholme.

Auditors. Major Brittlebank, Manchester, and Messrs. Litton, Pownall & Co., were elected.

Subscriptions. Mr. Sumner drew attention to a matter which had been brought before the Council as to whether it is desirable in the present state of affairs that members of the Society who are serving their country should have remission of their subscriptions.

The Council took the view that such remission should not be granted. Many of those away had substitutes acting in their places, and the Society was taking considerable responsibilities for a very small sum per annum. He thought it desirable that the meeting should know this.

Mr. HOPKIN proposed a vote of thanks to the retiring officers for the manner in which they had performed their duties.

Mr. MCKINNA, in seconding, expressed surprise that more veterinary surgeons did not become members of so useful a Society.

Mr. Taylor and Mr. Locke voiced their appreciation of the vote of thanks.

At Perth live stock marts last week, about 800 bullocks were sold at prices ranging from £35 to £50.

At Sheffield, on Saturday, fat beasts sold at £55 each, which was the highest price on record.

THE VETERINARY MEDICAL ASSOCIATION OF IRELAND.

[NATIONAL V.M.A. IRISH BRANCH.]

The annual general meeting was held at the Gresham Hotel, Upper Sackville Street, Dublin, on the evening of Monday, January 31st, Mr. A. Watson, outgoing President, occupied the Chair, and there were present: Profs. Mettam, J. J. O'Connor (Hon. Sec.), J. F. Craig (Hon. Treasurer), and G. T. Dunne; Messrs. T. G. Browne, W. P. Cushnahan, J. Doyle, J. B. Dunlop, J. F. Healy, J. Holland, P. J. Howard, L. M. Magee, B. P. J. Mahony, J. McCann, J. McKenny, J. H. Norris, D. S. Prentice, and W. H. Wilkinson.

The PRESIDENT said there were no minutes to be read at this meeting, as they came too late; the two sets of minutes would be read together at the next meeting.

CORRESPONDENCE.

The following letter was read from Mr. Elkins:—

Portal Inspection Office, Waterford.
January 21st, '16.

Dear Sir,

As I find it impossible to attend the Vet. Med. Association meetings, kindly ask the Committee to accept my resignation.—Yours faithfully,

W. E. ELKINS.

Prof. J. J. O'Connor, Hon. Sec. V.M.A.

P.S.—I much regret being unable to attend the Complimentary Dinner to Messrs. McKenny and Holland, who have done so much for the profession.

The PRESIDENT: Mr. Elkins sent in his resignation before, and was asked to reconsider his decision. As an important member of the profession, I do not think we should allow him to go. I think we ought to ask him to reconsider his decision, and remain amongst us.

Mr. PRENTICE concurred. He reminded the meeting that Mr. Elkins was in Waterford, and said that perhaps his idea of distance was not the same as the President's. In support of what the President had said, he would suggest that Mr. Elkins be asked to continue a member of the Association. This was agreed to.

Letter from Victoria Veterinary Benevolent Fund:—

Dear Professor Craig,

Will you kindly express to the members of your Society, on behalf of my President and Council, our thanks for their kind subscription to the above Fund.

The need is greater than ever, and we all very much appreciate their help.—With kindest regards,

WM. SHIPLEY, Hon. Sec. and Treas.

Southtown, Gt. Yarmouth,

May 3rd, 1915.

The PRESIDENT: We all recognise the importance of this Fund, and the great amount of good it has done for years past. I do not know how the subscriptions stand in Ireland in relation to the amount spent in this country, but last year we were on the wrong side.

The HON. SECRETARY: I cannot tell you exactly how they stand now. What you have said is quite true, and I know we are no better off now.

The PRESIDENT: We got more in benefit than we gave in subscriptions. I think that is a dreadful indictment of our sense of proportion. Is there anything that we can do to bring the members of the profession in Ireland to a sense of their duty in this matter?

The HON. SECRETARY: I do not think you can do anything but appeal to each member of this Association to subscribe to the Fund. It is a terrible pity they don't do so.

REPORT OF COUNCIL.

A meeting of the Council was held in the Veterinary College, on January 7th, 1916. The minutes of the preceding meeting were read, confirmed, and signed.

Letters of resignation from the Council were read from Messrs. Heney and Wilkinson. As Mr. Wilkinson's resignation was on account of his not being able to attend meetings of Council owing to his Government work, it was resolved that his resignation should not be accepted.

Letter acknowledging receipt of the vote of thanks, re passing of the Petrol Rebate Bill through Parliament, was received from Mr. Redmond.

As the Council had not received any nominations of officers for the coming year, the following were nominated: President, Mr. B. P. J. Mahony; Vice-President, in addition to those two going forward for re-election, Mr. J. H. Norris; Members of Council, in addition to those eligible for re-election, Messrs. Purcell, McCann, Barlow, and R. H. Lambert.

The following accounts were passed for payment: Messrs. Brindley, for printing; clerical assistant's half-yearly stipend, and postage expenses during the year 1915.

The date of the annual general meeting was fixed for Monday, January 31st, 1916, to be held at the Gresham Hotel, at 6.30 p.m., on which occasion the Diploma of Honorary Associateship was to be presented to Mr. J. McKenny. A dinner to be held after the meeting, at 7.30 p.m., Mr. McKenny to be invited as a guest of the evening. Mr. Holland also to be invited as a guest of the evening, in recognition of his successful efforts in securing the "Rebate on Petrol" Bill being passed through Parliament.

It was decided that estimates should be procured and three new medals struck, the supply of medals for presentation to the student in the Royal Veterinary College of Ireland obtaining the highest aggregate of marks in the final professional examinations, having become exhausted.

Anglo-Franco-Belgian Veterinary Relief Fund. It was resolved that a letter be sent to the members of the V.M.A.I., with the notices convening the annual general meeting, asking for subscriptions.

The Report of Council was approved by the meeting, and signed by the President.

ANGLO-FRANCO-BELGIAN VETERINARY RELIEF FUND.
10 Red Lion Square, London, W.C.

Dear Sir,

I have to-day received from Mr. Dollar your letter of the 31st December, together with cheque value £10 for the above Fund, which I have now paid into the bank.

I beg to enclose herewith a formal receipt, and to express my grateful thanks to the Veterinary Medical Association of Ireland for their generous subscription.

Yours faithfully, FRED BULLOCK, Hon. Sec.

Prof. J. F. Craig, M.R.C.V.S. Jan. 9th, 1916.

The PRESIDENT: You have all received the circular sent out on behalf of this very excellent Fund. It is to be hoped that you will weigh in with your subscriptions, and all good men and true ought to subscribe at least the minimum subscription fixed at 5s. Anyone who is inclined need not stop at the five shillings, and five guineas from any member will not be objected to.

J. F. CRAIG in account with the V.M.A. of Ireland, 1915.

Dr.	£	s.	d.	£	s.	d.
To Balance from 1914				33	6	2
Subscriptions, 1915	25	9	0			
Arrears paid	9	14	0			
Payments in advance	1	1	0			
				36	4	0

Dividends received 3 3 5

(Cost)

Invstd. in Consols £ s. d.

India 3½% 25 1 3

Bursary 40 0 0

£145 3 10

£ s. d.

Stock 133 8 2

India 25 10 10

£158 19 0

£72 13 7

Cr.	£	s.	d.
By Transfer to Bursary Account	1	1	0
Reporting meetings	4	4	0
Audit fee	1	1	0
Secretarial expenses (assistant)	10	0	0
Printing and circulating proceedings	3	7	6
Postage, etc. Secretary and Treasurer	2	1	9
Stationery and general printing	6	2	0
Victoria Veterinary Benevolent Fund	2	2	0
National V.M.A.—Subscription for 1914	2	15	0
Anglo-Franco-Belgian Vet. Relief Fund	10	0	0
Room for meetings	1	0	0
Cheque book	2	1	
Balance	28	17	3

£72 13 7

Bursary Account to January, 1916.

1915.	Dr.	£	s.	d.
January 1st—To Balance		48	15	4
Proportion of interest		1	1	0
		49	16	4

1915.	Cr.	£	s.	d.	£	s.	d.
December 31—By engraving medal					2	6	
Balance invested (Cost)	40	0	0				
In bank	9	13	10				
					49	13	10
					49	16	4

Examined and found correct,

January 24, 1916. JOSEPH H. WOODWORTH, F.C.A.

HON. TREASURER (Prof. Craig): Gentlemen, you all have copies of the balance sheet in your hands, and I do not think it requires very much explanation from me. There are two or three points which may interest you. The balance from 1914 was £33 6s. 2d. The balance this year is £28 17s. 3d. The reduction may be accounted for by the subscription of £10 which we gave to the Anglo-Franco-Belgian Veterinary Relief Fund, a subscription that may not be repeated in succeeding years.

The PRESIDENT: It is suggested that it would be.

HON. TREASURER: One point in regard to expenditure may meet with some criticism. I put down for stationery and general printing £6 2s., that sum includes printing the papers previous to the meetings

With reference to subscriptions, I regret to say that all the members do not pay annually. We have on the roll of membership about 100 names. The subscribers number about 52. No doubt we get arrears of subscriptions occasionally which add to the sum total of the amount we receive, but it would be much better for the treasurer and much easier for the members if they paid up the 10s. 6d. annually instead of requiring to pay arrears of one or two guineas, and occasionally three. One has to impress upon the members the fact that anyone who, according to a new rule, allows his subscriptions to run into arrear for three years, ceases automatically to be a member. With regard to the money invested, in Consols and India 3½ per cent., the sums given here represent the cost price, below is represented the full value of the stock which, however, would not be obtained in the market at the present time, and is not likely to be obtained for many years to come. In the Bursary account indicated below, the balance of £9 13s. 10d. will more than cover the cost of medals now arranged to be struck.

The PRESIDENT: Does anyone wish to criticise the balance sheet?

Mr. PRENTICE: I propose that the balance sheet be passed as it stands.

Mr. HOLLAND seconded the motion.

Mr. DOYLE: Have we to pay income tax on what we receive from the investments?

Prof. CRAIG: The amount we pay is very small. The amount we received last year is about a penny less than in previous years.

Mr. DOYLE: Can we recover the income tax we pay on what we receive from these investments?

The PRESIDENT: I do not know what is done in reference to that. I do not happen to be a trustee. The only one who ought to be able to deal with that matter is Mr. McKenny. Mr. Dunlop has not taken up his duty. Although Mr. McKenny is acting as trustee, the funds are invested in his name without reference to the Veterinary Medical Association, and he would transfer them to any other individual.

Mr. DOYLE: That is not the way the Association should have its funds. We should apply for a refund of the income tax which is now 1s. 9d. or 2s. in the £, if we can get it.

Prof. CRAIG: I can only say that is what I receive from Mr. McKenny. A little while ago I got a notification from the bank that certain monies had been lodged.

Mr. DOYLE: I think that when these are paid the income tax is deducted.

Prof. CRAIG: The curious thing is that the amount received is only a penny less than previous years.

Mr. DOYLE: That is only this year—what about next year?

Prof. CRAIG: I think the matter should be looked into.

Mr. NORRIS: The dividend is only three guineas. It is not worth while looking into.

Mr. HOLLAND: Do I understand that Mr. McKenny has full control. If anything happened to Mr. McKenny where could you look for the money? I had experience of a treasurer once holding a considerable amount of funds. We happened to collect a good deal, and most of the funds were intended for racing purposes. The races were allowed to lapse, and he happened to pay over amounts from the fund to pay this, that, and the other. We had no legal redress. If you leave funds in a man's hands for a certain time, as in that instance, he gets full control. Of course, Mr. McKenny will do nothing but what is right with it. From my experience I think there should be two trustees for every fund.

† Prof. CRAIG: The late Mr. Hedley invested the funds: they were invested in the names of Mr. Hedley

and Mr. McKenny. All I can make out is that the interest was paid in the first instance to Mr. Hedley, and after probate of Mr. Hedley's will was taken out the monies were sent on to Mr. McKenny. Here is Mr. McKenny himself now, and he wishes to get rid of the position of trustee altogether. For my part I do not wish that he should sever his connection with the Association. (Hear, hear). We do not want his interest in the Association to lapse altogether. Mr. Dunlop was appointed co-trustee with Mr. McKenny, but he has not yet taken up his duties. As far as I can make out all that is necessary for them to do is to go down to the bank and have the funds transferred to their joint names. There is no necessity for any resolution to permit of that change being made.

Mr. McKENNY: As regards that, I have resigned, and I am no longer a regular member. I think it would be far better, under the circumstances, to have the rules strictly carried out, and Mr. Dunlop or some other trustee should be appointed. As regards my severance from the Association—that is only in body. I am certainly still with it in spirit. (Hear, hear).

On the motion of Mr. Prentice, seconded by Mr. Holland, the question of trusteeship was referred to the Council.

ELECTION OF HONORARY OFFICERS.

The President announced that the following Honorary Officers had been elected unopposed:—

President—Mr. B. P. J. Mahony: *Treasurer*—Prof. J. F. Craig, M.A. (re-elected): *Secretary*—Prof. J. J. O'Connor: and that the ballot resulted in the election as *Vice-Presidents* of Mr. J. B. Dunlop and Mr. J. H. Norris: *Council*—Messrs. L. M. Magee, D. S. Prentice, M. Purcell, J. S. McCann and R. H. Lambert.

THE DINNER.

At the conclusion of the Annual Meeting, Mr. J. McKenny and Mr. J. Holland were entertained to dinner at the Gresham Hotel by the Association.

Mr. A. Watson occupied the Chair, and there were present: Messrs. B. P. J. Mahony (President), J. Doyle, J. B. Dunlop, W. H. Wilkinson, J. Holland, J. H. Norris, P. J. Howard, G. T. Dunne, J. J. O'Connor, J. F. Craig, J. McKenny, D. S. Prentice, L. M. Magee, J. F. Healy, W. P. Cushnahan, T. G. Browne, J. McCann, A. E. Mettam, Arthur Beckett, Wm. Usher, R. T. Riordan, J. W. Coley, G. E. Haines.

The toast of His Majesty the King was duly honoured.

The CHAIRMAN (Mr. Watson) said:—Gentlemen, only five minutes before I came into the room the terrible responsibility which I fully expected my friend Mr. Mahony, our new President, to take in presiding here was thrust upon me. The toast I have the honour to propose is that of our worthy friend Mr. James McKenny (applause). Sir Charles Cameron tells a story of a dinner at the Corinthian Club at which Mr. Winston Churchill was the guest, and when his turn came he asked Sir Charles "What are you going to talk about?" Sir Charles Cameron replied that he never prepared his speeches, that he depended on the inspiration of the moment. When Mr. Churchill got up he said that put him in mind of the member of Parliament, who, before he got up did not know what he was going to say; when he was up, did not know what he was saying, and when he sat down again did not know what he had said (laughter). The responsibility cast on me is a great one, but Mr. McKenny's reputation—his biography is known to everyone. He came from poor but respectable parents (laughter). I have it on the authority of a most distinguished citizen of Dublin that Mr. McKenny's mother was a lady of very great beauty, and judging from his own countenance his father must not have been too ugly (laughter). In Ireland, if you want to be a genius you must be very particular about your

parents (laughter). And so Mr. McKenny's parents had all those qualities which could be calculated to bespeak for him a brilliant career. He is a great man in the profession that he selected to adorn, and he has strong claims on the gratitude of that profession. He took up his education under Professor Gamgee, one of the most distinguished veterinarians, and has he not proved a worthy student of his? (hear, hear.) In Mr. McKenny I may boldly say Professor Ferguson had not only a very worthy assistant but a valuable colleague. Mr. McKenny stands as a practitioner of great renown; he is known north, south, east and west. He has been engaged in the most important cases for the past thirty or forty years, and he distinguished himself in the great poisoning case at Clonsilla. He has a genius for chemistry—which every practitioner should combine with his business—and as a patentee, if he devoted all his time to patents, Edison might have to take a back seat. Mr. McKenny has been connected with this Association from its very inception, and in season and out of season he has always been with us. There is no task or work that you might ask him to undertake in the interest of the profession and the Association that he would not cheerfully perform; and any time and any money at his disposal would be freely and willingly given for the advantage and benefit of the Association and the profession. Personally, I owe Mr. McKenny a deep debt of gratitude. Only a man of Mr. McKenny's courage, perseverance and persistence would have undertaken the work the result of which he sees brings us so happily together to-night (applause). In honouring Mr. McKenny we are honouring ourselves, and I can say with all sincerity that it is a joyous moment when I have the honour, on your behalf, of presenting to him the Honorary Degree of our Association.

The toast was honoured with enthusiasm.

Mr. McKENNY: Mr. President and Gentlemen,—I sincerely thank you for the very great honour you have conferred on me, in granting to me the Honorary Membership of your Association, which, up to the present has been allocated to most distinguished continental authors, who by their learning and ability have added a lustre to their profession, and are men of world-renowned fame. Sir Charles Cameron and Sir Christopher Nixon are the only two Dublin gentlemen that have been granted this distinction.

On such occasions as this the recipient of the favour usually gets ample time to prepare a suitable speech to convey his gratitude and appreciation, and I may candidly say that I considered various subjects which I intended to speak to you about, but I can assure you that I now feel quite unprepared to thank you sufficiently. However, there are a few matters that I would like to speak about, as I believe they will interest some of you.

The origination of this Association is due to our distinguished friend and colleague, Charles Allen. Twenty-eight years ago he conceived the idea, and he asked a number of members of the profession to dinner at his house on Rutland Square, amongst whom I distinctly remember were present the following:—T. D. Lambert, Col. Steele, Col. Glover, John Freeman, whom, I am sorry to say, are all dead. After the dinner (which, I need scarcely tell any of you who know Mr. Allen, was a sumptuous one), in a very short pithy speech, Mr. Allen gave us his ideas of the probable benefits that would be likely to accrue if we united and formed a Veterinary Medical Association. The matter was discussed, and there and then the Association was formed.

For some years at stated intervals we held meetings and discussed professional subjects, but there was no attempt made to otherwise forward the interests of the profession and gradually the members ceased to attend these meetings, and for years the Association lay

dormant. But fortunately another Association (The Central) was formed, which had the stimulating effect of reviving the activity of our members.

Mr. Hedley at this time became a member of this Association, and in my opinion through his influence and power of organisation the Association is the pioneer of the practical utility of such Association as set forth by our rules. I refer especially to our considering all matters pertaining to the interest of our profession, and reporting publicly the proceedings of our meetings and distributing to each member a copy of same. As for instance, we discussed the status, etc., of the profession in the Army, and in various public department. We circulated the grievances from which we suffered, and the outcome of our efforts is that our profession has obtained some important advantages—both monetary and social. I could mention many benefits that have accrued from this and other Associations setting forth our grievances, and I am pleased to believe that all Veterinary Associations in this matter are following our example.

There is another example I would like to draw your attention to. Mr. Charles Allen, at his own expense, in the High Court of Justice established the fact that veterinarians were exempt from serving on juries. But although our Association communicated the fact to the English Veterinary Associations, apparently they lack a man of Mr. Allen's personality to obtain this concession for them.

I am pleased that Mr. Watson has alluded to the fact that I was a student under Prof. J. Gamgee, as it invites me to now say a few words about him. Prof. John Gamgee lived a century before his time: highly educated, speaking fluently five languages, a brilliant operator, sound practitioner, eloquent, clear lecturer, author, inventor, and, from his microscopic examinations of tissues and blood in health and disease, one who anticipated what has occurred in the subject. His predictions relative to the study of bacteriology as to special organisms of disease and preventive and curative serums are those held at present and yet looked for.

Fifteen years previous to the outbreak of rinderpest which occurred in England in 1866, Gamgee went to the Steppes of Russia to study the disease, and immediately afterwards published a pamphlet on the subject in which he advocated the use of the thermometer, as a rise of temperature occurred previous to the exhibiting of any other symptom. He advocated prohibiting the importation of cattle from any country where the disease was known to exist; but in case that it was considered necessary to import cattle from a place that the disease occurred within a given period or was only suspected to exist, that the cattle imported into a country free from the disease should be isolated and quarantined at the nearest available place of landing. In the case of an outbreak of the disease occurring, wholesale slaughter on similar lines to that now adopted.

Those professional gentlemen officially appointed to inquire into the outbreak of the disease which occurred in London, at first diagnosed the disease (Rinderpest) as a virulent type of Foot-and-mouth Disease, and scoffed at Gamgee's diagnosis and suggestions; but subsequently were compelled to admit the correctness of his diagnosis and advocated his suggestions, which were adopted with success.

I may mention that Gamgee produced a serum and inoculated eighteen healthy bullocks with it. They all became affected with Rinderpest and made good recoveries, but he maintained that wholesale slaughter under the circumstances would prove more advantageous than inoculation.

The gentleman responsible for the wrong diagnosis I referred to received a responsible official appointment which he filled for many years. He died wealthy,

honoured by his King, Country and Profession, but, alas! poor Gamgee died as many other gifted men have, and will end their days, "unwept, unhonoured and unsung."

I have briefly referred to some advantages obtained from the practical aspect of the working of our Association. I now wish to say a few words as regards the benefits derived from the scientific point of view. I refer to the many able papers which have been written, read and discussed by the members of our Association. Uppermost at present in my mind are two papers—one written and read by Professor Mettam for us, on the blood. The subject is one of great importance and the Professor informed us that in the paper he could only briefly summarise a few of the more important matters pertaining to it. Time would only permit him to give us a cursory outline of the first half of the subject. He was compelled to divide it into two parts. We have only received the first part, and I sincerely hope that he will give us the second. I may say I never heard a paper read that interested me more, and I consider he dealt with the subject in a very able manner.

The other paper which I wish to specially mention was written by Professor Craig on "Nematodes." I am pleased that some of our distinguished continental scientists have considered it worth their while to refer to it as a very able essay on the subject, also praised the remarks made on it in the discussion, and stated that an association having such able men in it must be one of the leading Associations in any country.

This is the Association that now confers on me its honorary membership. I am deeply grateful for this, I may say your crowning honour; indeed you have always been very generous to me in the matter of honours. You elected me your President, and for twenty years you annually elected me as your Hon. Secretary. When I resigned you made me a valuable presentation—a massive silver salver and canteen of silver. Also you have appointed me as one of your Trustees, and I have been elected by you to every position of responsibility, and last—but not least—you now have enrolled me as an Honorary Member of this pre-eminently utilitarian Association.

Mr. NORRIS: Mr. President, Mr. Chairman, and Gentlemen,—A very congenial task has been allotted to me, namely, to propose the toast of our honoured guest, Mr. Holland. Like Mr. Watson, I have been taken at a disadvantage, having got very short notice to make anything like a decent speech, otherwise you would have been treated to some carefully prepared impromptu.

Mr. Holland is a very old friend of our Association and has done many things for it, for which we should be grateful to him. On every occasion he undertook the work voluntarily and of his own initiative. He has succeeded in that way in getting the veterinary profession put on the same status as the medical profession as regards rebate of the Petrol Tax. The monetary advantage may not be much, but I am sure the members of the profession regard these things from loftier standpoints. This question of rebate on Petrol Tax occupied the attention of the Royal College of Veterinary Surgeons for some years past. They exerted their utmost influence and the influence of powerful friends to have the concession granted, but failed. There is no doubt the Royal College of Veterinary Surgeons did a lot of hard work in the matter, but the work recently initiated by Mr. Holland has the merit of being successful—it led our forlorn hope to victory. I think we, as members of this local Association, should be extremely proud of Mr. Holland for the part he played in the matter. I am sure you would all rather see a concession coming as the result of his action than as the result of influence brought to bear by high authorities outside our profession.

We have not been so successful in the Car Licence

Rebate, which is still confined to medical men. Still, members of the profession in Ireland stand in a favourable position on this question of professional status owing solely, as Mr. McKenny pointed out, to the action of another member of our Association, Mr. Charles Allen, who obtained a judgment in the Courts to the effect that veterinary surgeons were "medical practitioners" so far as exemption from serving on juries was concerned. We all know Mr. Holland a long time, and I am sure none of us would wish for a finer type of Irish gentlemen.

Mr. HOLLAND: Gentlemen, I fear you have overwhelmed me by your kindness. I feel exceedingly complimented by the warmth with which you have drunk my health. It is not the first or second time that I have received a favour at the hands of this Association. I feel deeply indebted to Mr. Norris for the eloquent manner in which he has proposed the toast in terms which were altogether too flattering, to be sure, but I suppose a little exaggeration is permitted at a time like this. The honour of being entertained to-night as one of your guests is immensely enhanced by the fact that it synchronises with conferring the highest degree at your command on our old and valued friend, Mr. McKenny, who so thoroughly deserves all the encomiums which have been expressed—would that we could create him Sir James. But for Mr. McKenny this Association would not be what it is to-day, nor would it exist at all, but for the extraordinary energy which he has infused into it during so many years in a businesslike way, as well as by the many instructive scientific contributions. His ingenious inventions were always at our disposal, and he never denied us any knowledge that he thought would be useful to us. How often would the discussion have grown flat were it not for his ever-ready contributions to the debates. Never has he been shaken in debate, even by the trying volleys from Mr. A. Watson's 75 millimetres.

What a pity it is that a man of Mr. McKenny's stern character was not in command at Suvla Bay, for had there been, Constantinople—the great key to the situation—would now be in our hands.

Referring to the part which I recently played concerning the rebate on motor spirit, it is pleasing to find that you deem it worthy of appreciation. I only happen to have hit the ball at the opportune moment, I candidly admit, however, that once the ball set rolling I stuck up to it assiduously, hitting here and there until it safely reached the goal.

Amongst those who took up the agitation warmly, I may mention Messrs. Howard of Ennis, Healy of Middleton, and Brown of Naas. It was the M.P. for the constituency in which the last-named resides who so successfully moved the amendment to the Budget—Mr. John O'Connor, a gentleman as remarkable for his amiability as for his acknowledged statesmanship.

The Secretary and President of the R.C.V.S. took action the moment I asked them to again move in the matter, and they worked with a will. In Mr. Garnett we have a leader who would not stop at any personal expense whereby the profession might be served.

"Nothing succeeds like success," and the lesson to be learned from our gain in this case is that we should be always on the alert, and seize on any opportunity which may offer without delay. Let each say to himself—if success has attended a move made by one individual, why not all make a trial for some other. "Every little makes a muckle," and the aggregate may grow to importance.

Mr. Norris has referred to the motor tax. Strange to say that it was only when about to pay same some days ago that I became aware of the medical profession getting it at half rate. I at once wrote to Mr. John O'Connor, M.P., and he has very kindly promised to have a shot at securing that concession for us at the

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders† (including Farcy)		Parasitic Mange.		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Out-breaks.	Slaugh-tered.*
IRELAND. Week ended April 22	...	...	...	...	...	...	Outbreaks		4	9	49
Corresponding Week in	1915 ...	...	...	...	...	...	1	4	8	87	
	1914 ...	...	2	12	...	...	2	3	3	6	
	1913 ...	...	...	...	...	...	2	7	2	35	
Total for 17 weeks, 1915	1	5	...	...	...	...	28	200	100	530	
Corresponding period in	1915 ...	1	1	...	1	3	16	213	95	567	
	1914 ...	...	...	66	824	...	39	311	88	395	
	1913 ...	...	...	...	...	...	79	245	48	294	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, April 25, 1916
 NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

earliest opportunity. I trust that members will meantime use their influence with the parliamentary representatives in the different constituencies to support it.

It is a fact that in some cases when we are obliged to hire a motor we have to pay more for it than we can hope to get from clients, so that more than professional attendance goes for nothing. For this and many other reasons the veterinary surgeon more than anyone else deserves consideration in the matter of motor tax.

Mr. President and gentlemen, I fear that I am trespassing too long on your patience (No, no), and will therefore conclude by tendering to you my sincere thanks for the cordial reception which you have given my name (applause).

Mr. HOWARD proposed "The Services," and coupling with it the Army Veterinary Service. He said:—Gentlemen, I am not aware that we have any direct representative of the A.V.S. present, and I sincerely hope it is not a case of not thinking it worth while to attend. This is an important occasion when we have come to pay a well deserved compliment to two most excellent members of our Association. However, even in their absence, we will honour the toast of the Army Veterinary Service. Our profession and our own Association is well represented with the fighting force, and it is to the credit of the profession that they are doing good work, and that many members have already distinguished themselves with the expeditionary forces. It is also pleasing to note that their good work is being realised, and many of the concessions granted to the profession are entirely due to the work of the Army Veterinary Service (applause). Good Health and Good Luck to the Army Veterinary Service, and may our members return safely and with credit from the struggle.

Prof. METTAM: Gentlemen, I have been asked to reply for "The Services." I do so with great pleasure. I hold myself a commission in the Army Veterinary Service, and Professors Craig, O'Connor and Dunne are also commissioned officers in the Territorial Force of the Veterinary Service. I must say that we as a profession must be distinctly proud of what our men are doing and have done for the services. I believe I am right in saying that more than 25 per cent. of the total number of the profession have joined the services (applause) and are doing good work. I think it redounds to the credit of the profession that so many men have come forward and joined His Majesty's Forces at such a critical time. Some of the Members of the Royal College of Veterinary Surgeons are out at the front, and one of the most pleasant things that must commend itself to every member of the profession is the fact that

in the last despatches Sir John French recommended a member of the Council of the Royal College of Veterinary Surgeons, Mr. Joseph Abson, of Sheffield, for the D.S.O., and the first graduate of the Royal Veterinary College of Ireland to receive a distinction is Mr. Devine, who hails from near Waterford, and has been recommended for the Military Cross. I think that shows that the veterinary profession is doing its duty to King and country. (Applause). In addition to the members of the Army Veterinary Service, I would not like to sit down without expressing the appreciation of everyone for all that is being done and has been done by all our brave fellows on the water and on land. I think that if there is one thing that makes us all proud of what our fellows are doing—the men in the navy, the men in Flanders, France, Salonika, Mesopotamia, Egypt, South Africa, and everywhere, is that they are doing their level best, and they are determined to come out on top. (Applause). And the men in the Army Veterinary Service are doing their duty. General Moore, who came back a short time ago from France, pointed out how the men in that service were doing their share, and gave an instance where thirty men had to deal with a hospital in which there were three thousand sick cases. The men tackled the job as only the King's soldiers can. They are doing their best in a way that commends itself to us all. I am sure it would be some slight satisfaction to them to know that we appreciate that they are doing honest, good, and brave work. I am extremely thankful to you for having coupled my name with the toast of "The Services." (Applause).

The proceedings concluded with the singing of "Auld Lang Syne."

THE TAX ON MOTOR LICENSES.

Dear Sir,—I wrote a few days ago to the Hon. Neil Primrose, asking him to use his vote and influence in the House to have members of the veterinary profession put on the same level as medical men with regard to Motor Car Licenses and Petrol Supply.

I enclose his reply. You see he only mentions exemption from the petrol tax, which concession we have already had granted, but I have no doubt he also means other concessions which medical men already have or may have. I think this opinion is rather important coming, as it does, from a former Under Secretary for Foreign Affairs.

Yours truly, R. W. KNOWLES, M.R.C.V.S.
 South Brink, Wisbech,
 May 16th.

5 Great Stanhope Street, W.,
15th May, 1916.

Sir,—I beg to acknowledge the receipt of your letter with thanks. I am only back in England for a short period of leave, and therefore it is impossible for me to say whether I shall be in the House when the question of medical exemption from the petrol tax comes on for discussion. I would like to add, however, that I think no difference should be made in this concession between the medical and veterinary professions.—Yours faithfully,

N. PRIMROSE.

R. W. Knowles, M.R.C.V.S.,
South Brink, Wisbech.

CALF INTELLIGENCE IN AMERICA.

Sir,—I was amused at the note in last week's *Record* of "An American view on calf slaughter" and the comparison of the cost of erecting buildings with that of rearing and growing calves. The view of the amount of expense to do a thing is an absolute fetish with some men. It isn't always a question of what a thing costs to do, it is sometimes a matter of the seriousness of not having it at all. If no buildings were erected there would be no house room. If no calves were reared there would be no cows. The more cows the better for those who depend on them for food supply. One building does not give birth to another building, and one erection is not absolutely necessary to produce another edifice, but one cow is quite essential to produce a calf, and a calf must grow and be brought up to produce a cow. It is time that the trade and middle man point of view was put more in the background than it is with both us and Americans. The producer, whether of animal, vegetable or mineral material, is the most valuable asset at the present day, and production should be encouraged, given the first consideration, and receive the most reward, whilst trade, traffic and bartering should depend on production and take its right place, which is a secondary and subsidiary one.—Yours truly,

G. MAYALL.

The Totalisator.

A very forward move has been made in regard to the suggestion that the pari-mutuel system of betting should be introduced to English racecourses. A few hundred owners, breeders, trainers and others have signed a petition to the Stewards and members of the Jockey Club, the terms of which show that recognition of the principle and its practical adoption are urged on the following main grounds:—

(a) That revenue accruing from approved deductions on the gross volume of betting would enable stakes to be increased and substantial prizes for breeders to be established.

(b) That part of such revenue would also be available for the State for stimulating that declining light-horse breeding with which the thoroughbred is inseparably associated.

(c) That the principle in operation could not fail to have healthy and moral benefit for horse-racing.

It is thought that the present time is opportune for bringing this question to the notice of the Jockey Club; and, while recognising that it is one which must pass outside the mere limits of breeding and racing, they suggest that its national importance more than justifies its careful consideration.—*Live Stock Journal*.

[Although this system originated on the Continent of Europe, it has been in use successfully for some years in Australia, as we have previously pointed out.]

Plantain Juice as an Antidote for Snake-bite.

The *Times* of Ceylon reports that at Colombo, in the presence of a large gathering, including doctors, Mr. Donald Obeysekere demonstrated the efficacy of plan-

tain juice as an antidote to snake-bite. Mr. Obeysekere liberated a cobra from a gunny-bag face to face with a valuable bull terrier, upon which the demonstrator's confidence in his remedy led him to experiment. The dog, however, broke the cobra's back after a ten minutes' fight, during which he had succeeded in avoiding its fangs. The bull terrier was then held off, and a village pi-dog was brought in and was severely bitten by the snake. It howled with pain and collapsed in a few minutes. The dog was then given plantain juice freshly expressed from some young trees of no particular variety, and when about a breakfast-cup had been administered it is stated that the dog began to revive. Within half an hour it was on its feet, and the doctors present were satisfied that it had got over the effects of the poison. The journal adds that the experiment was then repeated with a cock, which was likewise bitten badly and recovered. Dr. Fabian Hirst, who was present, was asked to make further experiments, the result of which will be awaited with interest.

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, May 11.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temp. Lieuts.:—F. C. Golden (Apl. 26); J. R. Barker (Apl. 27).

May 13.

To be temp. Lieut.:—B. A. McGuire (May 1).

May 15.

The surname of Lieut. F. Morphy is as now described and not as in *Gazette* of May 2.

May 16.

Temp. Lts. to be temp. Capts.:—T. F. O'Brien (Apl. 28); S. H. Skelton, W. Burt (May 1).

May 17.

Temp. Lts. to be temp. Capts.:—T. H. Sherlock (Apl. 28); F. Birkin (May 1).

Temp. Lt. A. Cowan relinquishes his commn. on termination of agreement (Apl. 9).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

May 11.

Capt. (temp. Major) J. E. L. Still relinquishes his temp. rank on alteration in posting (Apl. 28).

Capt. J. L. C. Jones to be A.D.V.S. and is granted temp. rank of Major while holding the appmnt. (Apl. 29).

May 13.

To be Lieut.:—F. E. Jones (May 14).

May 15.

Lieut.-Col. G. Elphick relinquishes commn., with permission to retain rank and wear prescribed uniform (May 16).

The King has been graciously pleased to confer the following decoration:—

THE MILITARY CROSS.

Lieut. John Jackson Dunlop (Spl. Res.), for conspicuous gallantry in rescuing a wounded soldier who was lying under shell fire. The same afternoon he went to the assistance of two other private soldiers. One of these died, but Lieut. Dunlop carried the other into safety under fire.

His Majesty the King has been graciously pleased to grant unrestricted permission for the wearing of the Decoration conferred by Field-Marshal His Imperial Majesty the Emperor of Russia, for distinguished services during the Campaign.

ORDER OF ST. ANNE, 3rd Class, with Swords.
Capt. George Lloyd (Spcl. Res.).

[We conclude that this refers to Capt. Glyn Lloyd. We do not find the name of George Lloyd in the Register R.C.V.S.]

The following are reported

MISSING—Sgt. T. Allen, 8; Ptes. B. Bradley, 9; S. Corbett, 92; Cpl. G. E. Hills, 20.

The following casualties are reported under various dates:—

DIED—Ptes. J. R. Clarke, S.E./7485; A. E. Gregory, S.E./6656; M. Goatcher, S.E./793.

KILLED—Pte. C. Foxwell, 10.

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donations are reported:—

S. J. Gilbert, Sydney, Australia	£1	0	0
F. C. O'Rourke, Major A.V.C.		10	6
Previously reported	148	17	9
Total	£150	8	3

OBITUARY.

JOHN HOWATT, M.R.C.V.S., Pollokshaws, Renfrewshire.
H. & A. S., 1848; Edin: April, 1881.

The death of Mr. John Howat, M.R.C.V.S., occurred at his residence Curcraigs, Pollokshaws, on Thursday,

11th inst. Mr. Howat was fully 89 years of age, and until he retired, only a few years ago, carried on his professional duties. He enjoyed excellent health all his life, and was out as recently as a week previous to his death.

Educated at Macintyre's School, now a residence adjoining his own, and after an apprenticeship at the blacksmith's business of his father, he proceeded to "Dick's" Veterinary College, Edinburgh, where he completed his course of study. In addition to his profession, his principal interest was in agriculture, and for over sixty years he farmed a holding of adjoining lands to the town belonging to Sir John Stirling Maxwell of Pollok. Mr. Howat's sons are mostly in agriculture, except two—the eldest is a well-known veterinary surgeon in Londonderry, Ireland; while the other is a mining engineer. Mr. Howat's father migrated from Ayrshire to Pollokshaws eighty years ago, and the blacksmith's business initiated by him there is still carried on by a grandson. Mr. Howat's decease closes a long and successful record of veterinary practice in the South of Glasgow and County of Renfrew.

ARCHIBALD MUNRO, Jun., M.R.C.V.S., Altrincham, Cheshire. Graduated, Lond: July, 1906.

Mr. Munro died on May 11th, aged 34.

REVILL.—The death occurred, suddenly, on Friday, 5th inst., of Mrs. Revill, wife of Capt. William C. B. Revill, Dacre Gardens, Lee, who was formerly a member of the Lewisham Borough Council, and is well-known locally. Mrs. Revill was a daughter of the late Thomas Anderson, Little Harle Tower, Northumberland. The funeral took place at Saffron Walden.—*The Journal*.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
GR. BRITAIN.											
Week ended May 13	13	14					45	65	1	140	438
Corresponding week in											
1915 ...	12	13					29	52	3	107	392
1914 ...	12	14			4	5	37	59	2	146	1546
1913 ...	11	11			3	4	43	77	3	51	724
Total for 20 weeks, 1916 ...	264	308	1	24	21	62	1316	3075	170	1924	6070
Corresponding period in											
1915 ...	312	347			12	17	1282	1653	151	1597	6947
1914 ...	368	394	11	74	39	86	1210	2170	142	1526	15640
1913 ...	262	284			67	212	1393	2879	117	877	12619

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, May 16, 1916.

† Counties affected, animals attacked:—
Excluding outbreaks in army horses.

IRELAND. Week ended April 29		...	...	...	...	...	Outbreaks	...	1	7	13
Corresponding Week in	1915 ...	...	...	...	...	...	1	5	7	59	
	1914 ...	...	...	4	63	...	...	7	4	30	
	1913 ...	...	...	...	...	...	1	9	10	14	
Total for 18 weeks, 1916	...	1	5	...	...	...	28	201	107	543	
Corresponding period in	1915 ...	1	1	...	...	1	3	17	218	102	626
	1914 ...	...	...	70	887	...	...	39	318	92	425
	1913 ...	...	...	...	...	...	...	80	254	58	308

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, May 9, 1916.
NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1455.

MAY 27, 1916.

VOL. XXVIII.

THE FELLOWSHIP DEGREE.

The Fellowship examination held a fortnight ago was noteworthy from the fact that both the old and the new Fellowship regulations were open to the choice of the candidates. Four candidates passed the examination. Two chose the old regulations, and were both examined by the old Board of three examiners, the composition of which has not altered. The other two, choosing the new regulations, were each examined by two examiners, but with an important difference. One, whose thesis concerned clinical surgery, was examined by two clinicians, one being a professor of surgery. The other, whose thesis was upon Surra, was examined by two pathologists, one the editor of *The Tropical Veterinary Bulletin*, and the other a late expert of the Indian C.V.D. This fairly illustrates the chief aim of the new Fellowship regulations—that the examination shall be conducted by men who are specialists in whatever subject the candidate may have chosen for his thesis.

Ultimately, the change is certain to augment the number of candidates for the Fellowship Degree. The increased specialisation of the examination will render it more searching within its limits, and the recognition of this by members will raise the value of the Degree in professional eyes. In time, also, the public will realise that the Degree stands higher than it once did; and the net result will be to raise the status of the F.R.C.V.S. both within and outside the profession.

At the same time, paradoxical as it may appear, the examination will probably be found less difficult to most members than it was under the old regulations. For more than twenty years past, it has included a written examination over a very wide range of subjects. Almost every member, to make sure of passing this, has had to do a great deal of reading quite outside the lines of his ordinary work. The clinician has had to re-acquire many of the details of pathology and bacteriology; the sanitarian has had to re-study medicine and surgery; and, in these and other instances, a great deal of the reading has been taken up solely for the purpose of the examination. The new examination, though it has a wider range of subjects than the old one, narrows its syllabus for the individual. It allows each candidate to choose the class of subject which he is prepared to handle; and, though no doubt its requirements will be more stringent, will not include the reading up of several other subjects. That removes what has been an obstacle to many prospective candidates, and will increase the popularity of the degree.

MILK FEVER (?)

Cases such as recorded by Mr. James M'Dougall, M.R.C.V.S., of cows, months after calving, showing symptoms of milk fever, have occurred in my practice very frequently. They are locally known as staggers or fits, and the treatment formerly adopted of bleeding, purging, etc., usually resulted in death.

Since the introduction of udder inflation I have used that treatment, with very satisfactory results, the animals rapidly becoming relieved, and, as a rule, quite well again in a day.

ARTHUR NEW, M.R.C.V.S.

Ashton-under-Lyne.

THE CENTRAL VETERINARY SOCIETY.

[NATIONAL V.M.A.—SOUTHERN BRANCH.]

The Monthly Meeting was held at the Royal College of Veterinary Surgeons, 10 Red Lion Square, London, W.C., on Thursday evening, 4th May, Mr. W. R. DAVIS, President, occupying the Chair.

The following Fellows signed the attendance book:—Messrs. N. Almond, B. S. Cockerton, H. D. Jones, Herbert King, J. Norman, W. Perryman, E. Lionel Stroud, Thompson, J. Willett; Prof. G. H. Wooldridge, and Mr. Hugh A. MacCormack, Hon. Sec. Visitors: Lieut. P. Connolly, A.V.C., Lieut. J. R. Barker, A.V.C., and Mr. W. H. Brown.

On the motion of Mr. ALMOND, seconded by Mr. THOMPSON, the minutes of the last meeting were taken as read and confirmed.

The SECRETARY announced that letters and telegrams regretting inability to attend the meeting had been received from Messrs. Heatley, Fulton, Coleman, and McIntosh.

CASES.

Mr. ALMOND mentioned the case of a horse which came into collision with a motor car which resulted in the parotid duct being opened by transverse section. The owner did not attach much importance to the accident, and simply kept the wound clean for three days, when he sent for him. He treated it very simply, feed it upon wet food, and dusting it with boracic powder. When the animal was fed on dry food the saliva flowed as a clear fluid in a stream, but with wet food the flow was very much reduced. A deposit or coagulum formed about the wound, and the owner thought it judicious to wash it off, and immediately the saliva started to flow again. He advised him not to repeat the operation, and within about a fortnight the case healed up.

Prof. WOOLDRIDGE said the case pointed the moral one could draw between feeding with dry and liquid

foods under certain conditions. Saliva was one of the most important digestive fluids, and by feeding a horse on too sloppy foods digestion was impaired. A series of experiments had been carried out on the question of saliva and the sequence of increased secretions throughout the alimentary tract by Pawlow, who was able to show that reflexly following stimulation of secretion of saliva by feeding there was stimulation of gastric juice, even though nothing might have passed down the gullet. By ligaturing the oesophagus and preventing anything going into the stomach, there was increased secretion of gastric juice. On ligaturing the pylorus there was a flow of pancreatic fluids. When the pancreatic and gastric fluids were prevented from passing into the intestines there was an increased secretion of intestinal digestive juices. It followed, therefore, that wherever possible sloppy foods should be avoided, particularly in cases of indigestion. The food given should compel mastication, which was the normal physiological stimulation to salivation, and then one after the other there were increased secretions of digestive fluids throughout. In many cases it was possible to cure indigestion without using other means, and the same thing applied to human beings.

Mr. PERRYMAN reported the case of a horse which was very restless, colicky, and constantly looking around and getting up and down. The whole of the off-quarter almost from the ilium down to the stifle was swelling profusely. At first he thought it was a fractured femur, but the owner assured him that the horse had walked into the yard all right. The man said he had been down in the street, but he walked home, and then went down in the stable. When got up, the horse walked quite well. The membranes were particularly white, and he came to the conclusion that some large vessel in the region of the pelvis has been ruptured and that there was haemorrhage into the tissues. The following day the swelling was larger, but the animal was feeding fairly well. Some time later the horse was sent to fetch corn and the animal was stranded in the street. Three weeks later the horse was at work again, and after a week the swelling was pointing to the front of the stifle. He opened the swelling at the thin part of the flank, and let out quite half a gallon of serous fluid with huge clots of blood. The animal was now all right, except for some thickening down the side of the femur. Undoubtedly some large vessel had ruptured and was pouring one or two gallons of fluid into the tissues.

The PRESIDENT said there was nothing uncommon in having huge haematomata in cattle, and he had quite frequently to open them, and sometimes pulled out clots of blood weighing pounds, and the cases always did all right. Some of the swellings were over the ribs and some over the rump.

Mr. ALMOND said he had had a case much more moderate in extent, but the swelling was excessively tender. The swelling was in the groin and involved the sheath and a part of the abdominal wall inside the flank. He came to the conclusion that a wound had been made and become poisoned, although he could not find the wound. The animal was put on soft diet and the part bathed, and when the swelling subsided three weeks later he discovered an open sore on the side of the sheath, and considered it to be probably a puncture made by the point of a fork.

The PRESIDENT said that was a case of oedema from a wound, but Mr. Perryman's case was one of blood exuding into the subcutaneous and intermuscular connective tissue.

Prof. WOOLDRIDGE thought the main part of the swelling in Mr. Almond's case was lymphadenitis, due to the wound; and the painful swelling was due to oedema resulting from the choking of the lymphatic.

SIGNIFICANCE OF VOMITING IN DOMESTICATED ANIMALS.

RENEWED DISCUSSION.

Mr. HENRY GRAY (letter read by the President).

Dear Mr. Davis, I must congratulate you on your very excellent paper on "Vomition," and am pleased to see it has promoted a very good discussion. I am sorry I shall not be able to be present to take part in the resumed discussion. I am, therefore, sending you a few notes, which may be read to the meeting.

There is no doubt that vomition in the herbivora is always pathological, and as its incidence is well known I shall not add anything on this point.

I am in absolute agreement with those speakers who mentioned physiological vomiting in the bitch during the weaning period of her offspring.

Many birds—such as the canary and allied finches, pigeons, parrots—feed their young by regurgitating partly digested food from the crop; whilst owls cannot thrive for long unless they swallow fur, skin or feather, which they reject afterwards by vomition. Other birds—as the nightingale, vomit pellets containing the chitinous material of those insects on which they thrive.

The cat vomits its fur, and does this with greater ease if she ingests fish-bones and skin, which seem in this creature to have a purposeful action.

Physiological vomiting is mentioned in the Scriptures in which they say "a dog returns to its vomit."

Parrots and many other birds vomit when suffering from gastric catarrh, gastritis, gastro-enteritis, indigestion, etc. Dogs occasionally, and cats frequently, vomit after chloroform anaesthetization. The dog generally vomits after the hypodermic injection of narcotics and intestinal stimulants. Many of the short-faced dogs—as bull-dogs, pugs, Pekingese, will frequently vomit an undissolved capsule, pill, bismuth powder, etc. This cannot be due to a physiologico-chemical action. Many of the smaller breeds confined in a basket or box, or lying on one's lap, frequently vomit when travelling in a carriage, taxi-cab, or train. Cats deprived of verdure for a long time not rarely vomit at the sight of, and upon a green carpet.

Last year a great proportion of the dogs suffering from distemper first manifested repeated vomiting, which disappeared under treatment to be followed by more characteristic symptoms of the disease. As kidney-disease is almost general in dogs over eight years of age, one must be careful in concluding that because a dog died after repeated vomiting, and kidney-lesions—especially of the chronic type, were found on post-mortem examination, that the disease caused the vomiting.

Typhus is fatal in the majority of cases in old dogs, and as kidney lesions are commonly present anterior to that disease, I think co-existence of the two may have much to do with the mortality. In the case of the younger dog there may be no kidney disease yet repeated vomiting.

Kidney disease may exist in the dog for some years without the animal exhibiting any symptoms likely to attract attention. In numerous cases of polydipsia associated with polyuria—both are often exhibited when there is chronic nephritis—chemical and microscopical examination gives no result beyond a low specific gravity of the urine.

Old cats suffering from a chronic catarrhal gastritis or enteritis associated with chronic hepatitis often have intermittent attacks of vomition which is occasionally accompanied by diarrhoea.

I have never observed stercoral vomiting in typhus—I have in cases showing all the phenomena often seen in

the last stages of that disease, when there has been found on post-mortem examination a cork or other foreign body in the stomach or small intestine; stricture of the ileum, etc.

Vomition is not rarely absent in typhus; I have often seen it absent in gastric tympany, and in impaction with food or hair, both in the cat and dog. These cases, unless relieved, end suddenly; or they may linger until death supervenes from starvation or intoxication. In the case of starvation by impaction, as the stomach is full there is no stimulus for food.

The carnivora often vomit from brain disease, cerebral intoxication or blood-poisoning. Many of the inflammatory diseases set up intoxication of the bloodstream and thus cause vomiting. This is seen in the case of an abscess, or in an accumulation of catarrhal material in senile metritis in the bitch. In these conditions, as soon as there is an escape of the purulent material the vomiting ceases.

Torsion of the uterus, retained dead pups in an impervious uterus, retention of the urine and cystitis, due to the blocking of the urethra, or jaundice, bring about vomiting by absorption of the toxic material which is carried to the brain by the bloodstream.

Pharyngeal and oesophageal disease, irritation, or obstruction, set up retching rather than vomiting.

Areca nut seems to act more energetically on dogs suffering from an abundance of worms than when there are one or two; in the latter case it is often rejected by vomiting. It does not seem to matter in what manner or form this drug is given: a dog that cannot retain areca nut in powder or in solution does not often retain it when given in a capsule, pill or cachet. The same effects also result from similar vermifuges.

I hope you will have a very good resumed discussion. Symptomatology in diagnosis is very much neglected. On the Continent there are many works on the subject.

Mr. PERRYMAN said he had never seen a horse vomit. He remembered seeing a great many such cases as those recorded in the paper, but in his opinion they were not true cases of vomition. Accepting Mr. Davis' definition of vomiting—that it was the forcible expulsion of the contents of the stomach through the oesophagus, he felt that very few Fellows who took part in the discussion, or even Mr. Davis himself, had seen a typical case of vomition. He was not prepared to say it never happened, but it must be the rarest of all complaints in the horse. There was one case quoted by Mr. Davis which might be a true case of vomition—the one referred to by Prof. Wooldridge, the case recorded by Mr. Clunas. Had the paper been entitled "Oesophageal Trouble or Obstructions," Mr. Davis could not have brought forward a better array of cases, proving that the oesophagus was frequently a cause of distressing symptoms, and he had done everything to prove that vomition was very uncommon. The majority of cases recorded were either acute obstruction, due to the swallowing of a bolus or some indigestible fibre, more particularly a carrot or apple, or cases with structural changes of the oesophagus with dilatation, and a certain amount of regurgitation. He had seen animals which he would term choked, and they were most distressing cases, the animal ducking its head, arching its neck, putting out its forelegs and making spasmodic efforts, generally with a violent scream. Such cases generally got better, but it was almost impossible to do anything. He had a case where a friend gave another friend's horse an apple, which became fixed somewhere near the entrance to the stomach, and in that case the animal was nearly frantic with pain, and directly the head was raised and the oesophagus stretched, he threw out the front legs. In one case he tried to pass a probang, but to pass a probang in a horse that was choked was next door to an impossibility, as it was impossible to extend the animal's neck. In many cases he had been told that

animals were sick all over the box, but it had simply been partly masticated food which the animal had thrown back. In many cases it was the pharynx which was involved; he had several cases of distinct paralysis of the pharynx, and they always ended fatally. The animal would try to masticate food and would get a little down, but after a few minutes would cast up the whole mass of ingesta. That might be termed vomiting, but it was simply due to some paralysis of the throat. Vomiting movements he looked upon as a distinct spasmodic action of the stomach, associated with violent abdominal contraction. Vomiting was not a muscular effort of the throat, but abdominal. In the carnivorous animals there was distinct contraction of the abdominal muscles; it was the contraction of the abdominal muscles with contraction of the stomach and probably also of the diaphragm, all operating together, which probably caused the ejection of ingesta from the stomach itself. The whole trend of the discussion was to show that vomition was the rarest condition possible. The President deserved the thanks of the Society for having brought forward a most interesting subject; he had accumulated a mass of cases which must have taken him much time, and the thanks of the Society were due to him for having gone into the subject so thoroughly. But if he had proved one thing at all, it was that vomition was a very, very rare thing in the horse. A good many speakers had mentioned that they had seen rupture without vomition, but there was no proof that vomition was a sign of rupture, because a good many cases of rupture occurred without any vomition. Whether the presence of vomition was the cause of a rupture or not he believed was unproved.

Mr. J. WILLETT understood Mr. Perryman to say that he did not look upon the particular symptom of the horse putting out its front feet and "eweing" its neck as an attempt at vomition. If that was the case, what did he suggest that particular movement was?

Mr. PERRYMAN said it was due to spasms of the oesophagus of the pharynx.

Mr. WILLETT asked whether it was not an attempt of an overloaded stomach to relieve itself.

Mr. PERRYMAN said he had not seen that.

Mr. WILLETT said that on the previous Saturday a horse was brought in with those particular symptoms and with a certain amount of abdominal spasm. He thought it was a case of obstruction of the oesophagus and gave some oil, which the animal rejected, then a second dose of oil with hyp. inject. of morphia. Six hours after he had first seen the animal it died, and the *post mortem* showed rupture of the stomach. The horse had been lying on sawdust, and the stomach was practically full of ingesta mixed with sawdust, to the extent of 45 lb.

Mr. LIONEL STROUD mentioned two cases of vomiting in the goat, young goats of six or eight months old, bred by himself and stall fed, so that he knew exactly what food they had. Diarrhoea set in and lasted ten to fourteen days, and they became very emaciated and got down on their sides and, without any real effort of their own, brought up a brown fluid mixed with a little hay or chaff. They both died. The vomition did not start until within 24 hours of death, and was fairly persistent. The post-mortem showed gastro-enteritis. He looked on the vomition in those cases as being an exceedingly bad sign. He had noticed on several occasions intussusception of the bowel in the dog. The animal would eat fairly well but gradually became thinner, with diarrhoea and vomiting, and on death intussusception was found. That was especially common in chow puppies.

The PRESIDENT pointed out that Miss Cust, some years ago, in *The Veterinary Record*, gave an account of a large number of chow puppies with intussusception.

Prof. WOOLDRIDGE said he had referred to the occurrence of vomiting in goats on the last occasion, but his experience had not been so serious as Mr. Stroud's. Young goats would vomit with the greatest ease and the prognosis was a favourable one. It seemed to come on without any illness. The young goat stood and actually threw up material which had been disagreeing with him, and a stimulant would answer quite readily. The point in dispute between Mr. Willett and Mr. Perryman seemed to be that Mr. Perryman's statement that certain positions and certain spasms did not indicate retching or attempts to vomit, by which he understood him to mean that those symptoms were limited to the head, neck, and forelegs, and did not refer to any spasms of the abdominal muscles, while Mr. Willett specifically referred to the spasms of the abdominal muscles. Mr. Willett had cited his case as having some bearing on Mr. Perryman's views, but it was really a different case altogether, and supported the belief that the attempts at vomiting which Mr. Willett referred to were forerunners of the actual rupture of the stomach.

Mr. ALMOND said that in cases of gaseous retention he had seen regurgitation of gas up the oesophagus, and that was a very important symptom.

The PRESIDENT, in replying to the discussion, thought he might congratulate himself upon the fact that a very good discussion had taken place on his paper, a result which should move members to put a few notes together. He did not think there should be too close adherence to mere definitions. Everybody seemed to limit the term "vomition" to a condition of affairs in which there was a certain posturing of the animal and the emission of the contents of the stomach, but he had said in the paper that it might be thought one ought not to distinguish rigidly between attempts at vomiting and the completed act in considering vomiting in horses, because many so-called cases of vomiting in the horse were nothing more than vomiting movements, or these added to expulsion of frothy saliva, in cases of spasm or obstruction of the oesophagus. Mr. Perryman and others had not discovered anything very new in saying that all the cases in the paper did not refer to vomiting as strictly defined. He went on to say in the paper: "But as a matter of fact attempts at vomiting without discharge of stomach contents are quite often associated in the horse with grave lesions of the stomach or intestines, and are in effect real cases of vomiting," and he had said also that, although not quite common in the horse, vomiting was by no means rare, and certainly not exceptional, as some writers had stated. Mr. Willett had said at the previous meeting that it was easy to differentiate between conditions arising from lesions of the oesophagus and those of the stomach, and yet he had brought forward the case he had mentioned that evening, in which the cause of the trouble was only found p.m. Mr. Perryman said it was not vomiting so long as the abdominal wall did not contract. These academic distinctions were all very well in discussing the question seated round that table, but how was it possible to tell what structures were involved in the act in the case of an animal in front of one in a stall or box. The fact that when the horse put himself into the vomiting posture and sometimes shrieked, and yet expelled little or nothing, in Mr. Perryman's view this always indicated lesions connected with the oesophagus. That was not so. He had mentioned in the paper a case where a young mare was bad for 24 hours and made frequent attempts at vomiting, and died of ruptured stomach. Was that vomiting?

Prof. WOOLDRIDGE: Certainly not, if nothing was expelled!

The PRESIDENT said in his opinion it should be considered vomiting.

Prof. WOOLDRIDGE asked whether it was possible to have vomiting without a vomit. If it was, he granted

everything Mr. Davis had said, but it was asking too much. The advantage of a definition was that one knew what one was talking about. If a term could be stretched to include a score of different things, one would never know where one was.

The PRESIDENT said he had stated in his paper that one ought to include the attempts at vomiting as if they were actual vomiting. The animal (we are speaking of the horse) tries to vomit, and whether the trouble lies in the pharynx, the oesophagus, or the stomach the clinical picture may be the same, and, as in Mr. Willett's case, it may be possible to tell where the mischief lies by a post-mortem. It had been stated by Mr. Perryman and Prof. Wooldridge that there was only one case in the paper in which there was actual vomiting.

Prof. WOOLDRIDGE said he did not say that was the only case in which there was vomiting, but the only case which carried conviction.

The PRESIDENT said Major Martin had mentioned the case of a horse that vomited, and on post-mortem he found a rupture of the stomach. There was a yellow fluid pouring down the nostrils.

Prof. WOOLDRIDGE said that was not necessarily a case of vomiting. He had never seen the contents of a horse's stomach consisting of yellow fluid, and there was no evidence that it came from the stomach.

Mr. PERRYMAN said the yellowish fluid might be an accumulation of saliva associated with a drench poured down the animal's throat.

The PRESIDENT said that Mr. Scott described the case of a mare that vomited ingesta and died, and a rent 12 inches long was found in the greater curvature of the stomach. Mr. Wallis Hoare also described a case in which besides gastritis an inflamed condition of the oesophagus was observed. The animal died after vomiting. Then there was the case mentioned of the donkey which was in great pain, sweated a great deal, and rapidly vomited, as he had been told by the man. In front of the donkey, when he got there, was a quart or three pints of chewed grass. Would Prof. Wooldridge think that came from the oesophagus?

Prof. WOOLDRIDGE said he would not be at all surprised if it did.

Mr. ALMOND said that as the donkey recovered he did not think there was any doubt that it came from the oesophagus.

Prof. WOOLDRIDGE said he was not definitely contradicting the cases at all. In a number of the cases there might certainly have been vomiting, but they did not carry conviction. He did not dispute the possibility of vomiting in the horse, but did say that it was one of the most uncommon conditions; whereas Mr. Davis seemed to think it was quite a common condition.

The PRESIDENT said he had admitted in the paper that it was not exceptional, though rare.

Prof. WOOLDRIDGE said that was the particular point on which he joined issue.

The PRESIDENT said there was disagreement with regard to admitting vomiting movements without ejection of material from the stomach to be vomiting. If it was agreed that vomiting movements constituted vomiting (for the purpose of considering its significance), then he was bound to say that it was not so very uncommon.

Prof. WOOLDRIDGE said he would agree on those conditions.

Mr. PERRYMAN said that over and over again he had been to places where he had been told that the animal "had been sick all over the place;" but he wanted veterinary surgeons to be more definite, and to say personally whether they had actually seen the ejection of the contents of the stomach when they were in front of the patient.

The PRESIDENT said he had seen a horse try to vomit over and over again. There was no doubt that a great

number of the cases occurred from lesions of the oesophagus and sometimes dilatation of the oesophagus, and sometimes from spasm of the oesophagus or paralysis of the pharynx. In cases of vomiting in the horse Mr. Perryman considered it was impossible to pass the probang, but he himself had passed the probang dozens of times in the horse successfully, though he would not do it so often now where he suspected choking merely.

Prof. WOOLDRIDGE said that passing the probang was not a difficult thing, but he could never be certain that it had actually gone into the stomach, that it had not reached the oesophageal entrance without going further.

Lieut. CONNOLLY said in his experience vomition might be a symptom of rupture of the stomach, but of a particular part. If that part of the stomach was ruptured it caused relaxation of the mucous lining of the stomach and the contents of the stomach might be expelled into the oesophagus and the act of vomition occurred. He did not consider the contents of the pouches in the oesophagus if expelled through the mouth as a case of vomition. Liquids might pass from the sinuses in the head, or the lungs or from the oesophagus into the mouth, and that might be described as an act of vomition, but it was not so unless the material passed from the stomach. Mr. Gray has spoken of vomition being associated with a pathological condition in herbivora, but it was really a physiological condition. A herbivorous animal could eject its food again into the oesophagus and re-masticate it.

Prof. WOOLDRIDGE said ruminating was a physiological condition and vomition a pathological condition.

The PRESIDENT said some writers went so far as to say that it was pathological in every animal.

Lieut. CONNOLLY said, in the dog the act of vomition is under the control of the will. He had seen rupture of the stomach in two or three cases without any symptoms of vomition whatever, because the rupture was in a position that did not interfere with or cause the relaxation of the rugae of the animal's stomach. With regard to the passing a probang in a horse, there was a curtain at the posterior extremity of the mouth, the velum pendulum palati, and his opinion was that in attempting to pass a probang through a horse's mouth that membrane was ruptured. The safest way was to get a fine probang and pass it through the nostril, as was frequently done in America. He had heard of a case of vomiting occurring in a mule on board ship, and the animal recovered. That might have been due to sea-sickness—*Mal de mer*.

The PRESIDENT could not see any great advantage in passing a probang by the horse's nostrils, as there was no difficulty in passing it down the mouth, with a balling iron, or even a stirrup iron, in the mouth, as he had done many times. He did not advise it, and often there was no need to do anything at all in cases of choking in the horse with attempts at vomition. With regard to the sequence of events in the case of rupture of the stomach, he quite agreed with those who said that the rupture was subsequent to the attempts at vomition. Prof. Macqueen no doubt had in mind the case of the donkey mentioned in the paper, which had vomited a large quantity of green material with which the nostrils were still soiled, because Prof. Macqueen had said that he certainly would not be inclined to accept the statement that a horse with its nostrils soiled a greenish colour must have vomited. Neither would he himself think so, because in cases of strangles and sore throat, through inability to swallow, the condition of the throat was such that part of the chewed grass came down the nostrils with the discharge. But what he saw in the donkey was not only on the nostrils but on the ground in front. Prof. Macqueen said that without vomition at all there might be regurgitation of the semi-fluid contents of the stomach in cases of purpura, influenza

or pneumonia. He had never seen that. Prof. Macqueen also did not consider that the ox ever vomited. He himself had seen the spewing of the cud in cows over and over again, but the animal in these cases could hardly be said to actually vomit. He had not seen what could be called vomition in the ox. He had seen, however, a sheep in rhododendron poisoning make a forcible ejection of the contents of the rumen. Prof. Peuch had stated distinctly that he had seen the contents of the abomasum ejected by cattle, the animal posturing for the act as a horse did. Mr. Slocock had spoken of vomiting in the pig, which he said was common, and common in swine fever. He had looked up all the authorities he could, and the only reference he could find was in Wallis Hoare's book, where he said that vomiting occurred rarely in swine fever. Although there might be extreme gastritis in the pig, there was no vomiting. In the only two cases of vomiting he had seen recently in pigs, the animals died. Vomiting was exceeding common in the dog. Mr. Gray seemed to think that one should not attach much value to vomiting in the dog in connection with kidney disease, as a dog might have persistent vomiting and die of chronic cirrhosis of the kidney and yet vomiting ought not to be connected with the disease. He disagreed with Mr. Gray, and agreed with Prof. Wooldridge that the two should be connected. In man vomiting in Bright's disease might be the only symptom. Prof. Macqueen had asked Prof. Wooldridge to state the connection between nephritis and vomiting, but he did not think there was any occasion to do so, the fact that there was a connection was the important point. With regard to Mr. Gray's statement as to the circulation of certain substances in the blood inducing vomiting, that might or might not be so; all that it was necessary to do was to prove that there was a significance between the symptom of vomiting and certain conditions likely to be found. In persistent vomiting in the dog it was well to look out for the condition of the kidneys.

GRANT TO ROYAL COLLEGE OF VETERINARY SURGEONS

Mr. J. WILLETT moved: "That it be a suggestion to the Council that the Society should make a gift of £40 to the Royal College of Veterinary Surgeons." He pointed out that the financial state of the College was very bad indeed, and money did not seem to be coming in very well. As the Society was so well off financially, he thought it might do something to assist the College, which was deserving of support. The College did all it could, and as well as it could, with the money it had in hand, and if it did not get help it would soon be "on the rocks." On the last occasion he had suggested that the Society should either lend the College its funds free of interest until it was in a better financial state, or make a grant of money, but he had been told by the President of the College that, although the Society's efforts in that direction were appreciated, the rules of the College would not allow money to be borrowed, but the Council would be very grateful for any sum the Society could afford to vote.

Mr. PERRYMAN asked how the finances of the Society stood.

The HON. SECRETARY said there was at present in hand a little over £20 in cash and a good many subscriptions had yet to come in. There was £80 in 5% Exchequer Bonds, and £100 in Consols, the latter, however, is worth much less now. He thought it would be a graceful act to subscribe a substantial sum to the College. The whole matter would have to come before the Council. He seconded Mr. Willett's proposition.

Prof. WOOLDRIDGE suggested that the amount should be £20, and if the same conditions existed another year a further £20 might be voted. He suggested that Mr. Willett should accept an alteration of his motion to the effect that the Society recommend to the Council to

make a substantial grant of not less than 20 guineas, if possible, in aid of the funds of the Royal College of Veterinary Surgeons.

Mr. WILLETT accepted the amendment, which was also accepted by Mr. MACCORMACK, and on the resolution being put it was carried.

A hearty vote of thanks was accorded to the President for his paper, and the President having briefly replied, the meeting terminated.

HUGH A. MACCORMACK, Hon. Sec.

Prosecution by the R.C.V.S.

In Kirkcudbright Sheriff Court recently Sheriff Napier heard evidence in a prosecution brought by the Royal College of Veterinary Surgeons against Colin C. Muat, the charge being that on 21st December, 1915, at Castle-Douglas, he, not being a member of the College, unlawfully placed the letters "M.R.C.V.S." after his name, contrary to the Veterinary Surgeons Act. Mr. Muat was represented by Mr. J. R. Saunders, Castle-Douglas, and the College by Mr. W. Nicholson, junr., Kirkcudbright.

John Baird, M.R.C.V.S., Dumfries, stated that in November the locum employed by Mrs. Campbell, Castle-Douglas, to carry on the practice of her late husband, had left that town, and witness had communicated with Mr. Muat, offering him the job. He was then in Yorkshire, but his usual residence was at Lockerbie, where he acted along with another veterinary surgeon, Mr. Pollock, in, he understood, the capacity of assistant. He engaged him for Mrs. Campbell, and he had been in no way acting as assistant to witness. In January he heard from the Irish Board of Agriculture about a certificate granted by Muat, and he asked the latter for an explanation. Muat, as far as he knew, had never been in charge of a practice before without a qualified man over him. Shown certificate (for the removal to Ireland of a horse) granted by Mr. Muat, he saw that the signature read—"pro John Baird, Colin C. Muat, M.R.C.V.S., assistant," the first three words being on the dotted line provided for the signature, Muat's own name immediately below, and opposite the printed letters, "M.R.C.V.S.," while the word "assistant" was below Muat's name. The statement by Muat in a letter to the Irish Department that witness supervised the Castle-Douglas practice was not correct. He had no responsibility for Muat, and had never been asked by him to sign certificates for him. The purpose of these certificates was to prevent contagious diseases being carried to the countries to which the animals were removed. They were of importance in the interests of public health. The College of Veterinary Surgeons was very strict on the point that no unqualified person used the initials "M.R.C.V.S." Cross-examined: It was impossible to get the services of a M.R.C.V.S. as a locum at the present time. Muat was a very capable man, and on several occasions when witness was from home he had no hesitation in getting him to act for him for a day or two. He was a man of experience, and a good all-round practitioner. Muat had no interest in signing the certificate. Whether the drawings were £10 or £100 a month it made no difference to him. It was quite common for unqualified men to be employed in practices at all times.

H. W. B. Crawford, farmer, of Chapmanton, Castle-Douglas, said that in December Muat examined a bay Clydesdale colt for him, and certified it in good health and free from disease. He did not know that Muat was unqualified, and he was, of course, aware that a certificate signed by a man who was not a M.R.C.V.S. was valueless.

Mrs. Campbell, widow of Thomas J. Campbell, M.R.C.V.S., Castle-Douglas, also gave evidence.

Respondent (43) said he had been an assistant veterinary surgeon for 14 or 15 years. In signing the certificate the way he did was not implying that he was a M.R.C.V.S., but was rather drawing attention to the fact that he was not. If he had not signed the certificate himself he would have had to get either Mr. Baird from Dumfries, or Mr. MacAlister from Kirkcudbright. Cross-examined: He did not think the certificate was useless. He thought the Department would let it slip, as they knew quite well it was difficult to get qualified men. When he came to Castle-Douglas he thought it was as assistant to Mr. Baird, as he had no communication with Mrs. Campbell. He had only been in Castle-Douglas a week or two at the time he signed the certificate.

The Sheriff said that according to his reading of the signature there was no intention to imply that Muat was a M.R.C.V.S., and he found him not guilty.

Successful Warrantly Defence in a Milk Prosecution.

Some time ago Stipendiary Neilson, Glasgow, heard proof in a prosecution at the instance of Mr. Peter Fyfe, sanitary inspector, Glasgow, against Misses Hay, milk sellers, 373 Eglinton Street, Glasgow, charging them with having on 11th February, 1916, sold sweet milk which was not genuine in respect that it was deficient in milk fat to the extent of 16 per cent. The defence was that the accused bought the milk from a dairyman, under warranty by which he guaranteed its purity. The warranty was in the following terms:—"This is to certify that the milk supplied to Miss Hay, Eglinton Street, Glasgow, is guaranteed pure by (sgd.) David Taylor." The warranty was undated. Mr. M'Intyre, P.F., prosecuted, and Mr. J. A. Reid, solicitor, Airdrie, defended.

At the proof, the accused stated that they got the warranty from the dairyman when he began to supply them with milk over a year and a half ago. The warranty was given to them by the dairyman personally on the day they got their first supply from him. They understood the warranty was to cover the whole period during which they were getting milk from him. During the whole time he had supplied them with milk they had never any reason to suspect that the milk was not genuine, and on the particular day that the sanitary inspector got a sample, the milk sold to him was sold in the same state as when purchased from the dairyman. After the sample was taken by the inspector, the accused informed the dairyman that it had been taken, and he accepted responsibility for the milk, but he assured them that it was genuine. He took away the check sample to be analysed, and afterwards informed the accused that the result of the analysis was the same as that of the inspector. It was further proved that notice that the warranty was to be pleaded in defence had been given to the prosecutor and also to the dairyman, that the latter might be present at the trial, but he did not appear.

Mr. M'Intyre, P.F., maintained that the warranty was one to which effect could not be given. It was not dated, and there was nothing to connect it with the particular consignment of milk from which the sample had been taken. Its terms, he argued, might apply only to the particular consignment of milk delivered on the morning the warranty was handed to accused a year and a half ago. If that were so the warranty was of no value, and in support of this he referred to several English cases.

Mr. Reid, for the defence, maintained that the warranty was quite good in law. No doubt it was undated, but it had never been decided that a date was essential to a warranty. Then as regards the scope of the warranty, that was to be gathered from parties' actings. The two accused had sworn that they understood that the warranty applied so long as they purchased milk from the dairyman, who, although notified of the case, had not appeared. Not only that, but he accepted responsibility for the milk in question verbally and by taking possession of the check sample, and getting it analysed to satisfy himself. All this evidence showed clearly that the milk sold to the inspector was intended to be protected by the warranty. In the defence of warranty, all that had to be done was to connect the warranty with the milk in question, and in this case that had been done in a satisfactory way. The case law on the subject was in a somewhat fluid condition, but on careful consideration of the leading cases, Mr. Reid maintained that accused were entitled to be acquitted.

In view of the legal questions raised, Stipendiary Neilson made *avizandum*, and on the 2nd inst. decided the case by finding the warranty good in law, and therefore acquitting the accused.—*The Scottish Farmer*.

ELECTION ADDRESS.

To the Fellows and Members of the

Royal College of Veterinary Surgeons.

Gentlemen,—I have the honour, as the nominee of the North of Ireland Veterinary Medical Association, to offer myself as a Candidate for Council at the forthcoming election of the Royal College of Veterinary Surgeons.

I am not satisfied that the present system of election is either satisfactory or equitable, and I think the time has more than arrived for its overhauling.

I hold that the British Isles should be mapped out into districts, and that each district should have assigned to it its proper quota of representatives. Special seats might also be reserved for the Schools, the Army, and Civil Veterinary Services. By such a system no section of our profession need allow its interests to go unvoiced, and I feel sure that the general body of the profession would become much more interested in the welfare of the College.

I am a strong believer in the necessity for a Ministry of Public Health, under which our scattered and independently working Veterinary Services could be amalgamated, and form a very important section. I hold that in such a service our profession would benefit, and the benefits we could render our country would be abundantly proved.

I am not offering myself at this election from any sense of dissatisfaction with our present Council, they have probably performed their duties as well as possible, having regard to existing conditions; and our worthy President is beyond all praise, deserving all the honours we can bestow upon or secure for him.

If elected, I shall endeavour to uphold the best interests of the profession as a whole, and further the views I have expressed in this short address.

I have the honour to be,

Belfast, Your obedient servant,
May 22nd, 1916. F. W. EMERY.

Natural Jumpers.

The question, Do horses take to jumping naturally? has been asked in *The Live Stock Journal*; to which Mr. Sanders Spencer replies in the affirmative, and quotes the following instance:—

"In the early 'sixties a farmer friend lived in a village where training stables were located. Amongst the good-looking two-year-olds was a brown colt by, I think, Promised Land. This colt was tried and found wanting in speed, so was turned out of the string and sold without pedigree to our friend, who was a fine horseman and keen on horse-breeding. In the spring of 1865 we put a brown mare to the colt. We knew nothing of her breeding, but she was of the light, active type of Norfolk farm horse, possessing clean bone, good shoulders, and good outlook. The produce was a chestnut filly. The filly was handled at two and ridden on the farm at three. When out one day with a brace of greyhounds a hare was put up, and the filly followed across country as naturally as though she had been trained over fences for months. She became a perfect *lepper* without any real schooling. Many, if not all, of the produce of this stallion which sired our filly proved to be exceptionally good jumpers, and most of them took to it naturally. The quality was evidently hereditary, since the sire was a perfect hunter, and was ridden in the field for several seasons without giving its rider a bad fall."

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds:—

R. Branford, I.C.V.D.	£1	1	0
J. R. Carless, Shrewsbury	2	2	0
G. R. Dudgeon, Sunderland	1	1	0
R. C. G. Hancock, Capt. A.V.C.	2	2	0
F. Hopkin, Capt. A.V.C.	1	0	0
T. Hopkin, Manchester	1	0	0
T. R. Jarvis, Gateshead-on-Tyne	1	1	0
A. S. Macqueen, Glasgow	1	1	0
H. S. Mosley, Major A.V.C.	1	1	0
T. T. Taylor, Capt. A.V.C.	1	1	0
W. R. Watson, Thornbury	1	1	0
E. C. Winter, Limerick	1	1	0
Amount previously acknowledged	246	10	0
	£261	2	0

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donations are reported:—

J. M. Armfield, South Africa	£1	1	0
H. S. Mosley, Major A.V.C.	3	3	0
W. P. Hamlyn, South Africa	1	0	0
G. E. Tillyard, Major A.V.C.	3	0	0
Previously reported	150	8	3
Total	£158	12	3

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, May 19.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lieut. to be temp. Capt.:—H. Barnard (Apl. 26).
Temp. Lieut. T. R. R. Hoggan relinquishes his commn. on termination of his agreement (May 14).

May 20.
Temp. Lieut. to be temp. Capt.:—L. W. Heelis (May 10).
To be temp. Lieut.:—R. G. Wilson (Apl. 30).

May 22.
To be temp. Capt.:—W. P. B. Beal (Aug. 9, 1915) (substituted for notification in *Gazette* of Aug. 30, 1915).
Temp. Lieut. to be temp. Capt.:—J. E. Hutchinson (May 11).
To be temp. Lieut.:—J. A. Brew (May 8).

May 23.
Late temp. Lieut. to be temp. Capt.:—J. Scott (May 10).
Temp. Lieut. H. A. King relinquishes his commission on account of ill-health (May 24).
To be temp. Lieut.:—Kenneth D'Arcy Sewell (Apl. 20).

May 24.
Temp. Lts. to be temp. Capts.:—J. M. Crowe (May 13); B. B. Loel (May 15).
To be temp. Lieut.:—F. C. Heron (May 12).

The following casualty is reported:—
KILLED—Sgt. H. J. Taylor, S.E./5365.

OBITUARY.

ALFRED HENRY CLAPP, F.R.C.V.S., Temp. Lieut. A.V.C. Peckham, S.E. Graduated, Lond: Jan., 1895.

Lieut. A. H. Clapp was accidentally killed while on active service, aged 42 years. He was only son of the late Thomas Henry and Mary Ann Clapp, of Peckham and Herne Bay.

CORRESPONDENCE.

THE TAX ON MOTOR LICENSES.

Sir,—I sincerely hope that practitioners are not sleeping over soliciting the support of their M.Ps. *re* Motor Tax, so that Mr. John O'Connor's motion may have a unanimous pass. Time should be taken by the forelock, he is bald behind.—Yours truly,
JOHN HOLLAND.
Model Farm, Athy, 23rd May

(The following have been forwarded to us for publication.)

Polebrook, Haver,
Kent, April 28th, 1916.

Dear Sir,—I have received your letter of the 16th inst. with reference to the Motor License Rebate. I should be very pleased to support the case if the matter comes up in the House of Commons.—Yours faithfully,
J. R. Baxter, Esq., BEN BATHURST.
Lechlade, Glos.

98B, Mount Street, W.
18th May, 1916.

Dear Sir,—I am duly in receipt of your letter of the 12th instant, and shall be very pleased to do what I can to get Veterinary Surgeons put on the same basis so far as taxes on Motors are concerned as Doctors.
Believe me, yours faithfully,
CLIFFORD J. CORY.

F. C. Hobbs, Esq., M.R.C.V.S.,
Newport, Mon.

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended May 20	10	11					32	58	2	123	356
Corresponding week in											
1915 ...	10	11			1	1	28	46		122	720
1914 ...	16	16			1	1	25	46	2	117	954
1913 ...	13	13			4	4	56	97	2	54	1183
Total for 21 weeks, 1916 ...	274	319	1	24	21	62	1348	3133	172	2047	6426
Corresponding period in											
1915 ...	322	358			13	18	1305	1699	151	1719	7667
1914 ...	384	410	11	74	40	87	1235	2216	144	1643	16594
1913 ...	275	297			71	216	1449	2576	119	931	13402

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, May 23, 1916

† Counties affected, animals attacked:—
Excluding outbreaks in army horses.

IRELAND. Week ended May 6	1	1	...	...	...	...	Outbreaks	1	6	3	51
Corresponding Week in											
1915 ...	...	...	...	...	...	...	...	8	6		33
1914 ...	1	1	...	...	...	...	1	4	6		18
1913 ...	...	...	...	...	...	...	2	13	3		70
Total for 19 weeks, 1915 ...	2	6	...	...	...	...	29	207	110		596
Corresponding period in											
1915 ...	1	1	...	...	1	3	17	226	108		659
1914 ...	1	1	70	887	...	...	40	322	98		443
1913 ...	...	...	...	...	...	...	82	267	61		378

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, May 9, 1916

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection

THE VETERINARY MUTUAL DEFENCE FUND.

Dr. *Mr. J. B. Wolstenholme, 102 Quay Street, Manchester. Hon. Treasurer, in account with the Fund.* Cr.

To Cash at Bankers, Dec. 31st, 1914 :	£	s.	d.	Jan. 1st to Dec. 31st, 1915.	£	s.	d.
Manchester and Salford Savings Bank	641	9	7	By Printing and Stationery	...	4	16 9
Manchester and L'pool District Bank	325	1	9	Treasurer's Postages, etc.	...	3	16 0
£966 11 4				Hire of room for meetings	...	1	5 0
Jan. 1st to Dec. 31st, 1915.				Accountancy charges for year 1914	...	8	8 0
To Entrance Fees and Subscriptions received for 1915 and arrears	...	122	17 0	Advertising	...		10 0
Subscriptions received in advance	...	5	15 6	£18 15 9			
Bank interest	...	24	18 8	Law costs and expenses in defence of actions brought against members of the Society	...	27	3 0
£153 11 2				By Cash at Bankers, Dec. 31st, 1915 :			
				Manchester and Salford Savings Bank	659	17	1
				Manchester and L'pool District Bank	414	6	8
				£1074 3 9			
£1120 2 6				£1120 2 6			

We have examined the above written account and certify the same to be correct,

21st January, 1916.

LITTON, POWNALL, BLAKEY & HIGSON.
TEDBAR HOPKIN, F.R.C.V.S.

THE NATIONAL VETERINARY BENEVOLENT FUND.

Dr. *Mr. J. B. Wolstenholme, 102 Quay Street, Manchester, Hon. Treasurer, in account with the Fund.* Cr.

To Cash at Bankers, Dec. 31st, 1914 :	£	s.	d.	Jan. 1st to Dec. 31st, 1915.	£	s.	d.
Manchester and Salford Savings Bank	328	10	7	By Grants :			
Manchester and L'pool District Bank	199	10	3	E.W.	...	13	17 6
£528 0 10				A.G.F.	...	13	0 0
Jan. 1st to Dec. 31st, 1915.				E.G.	...	13	0 0
To One Year's Interest on Bond for £1300 at 4 %, less tax	...	46	18 2	H.T.	...	12	0 0
One Year's Interest on Bond for £600 at 3½ %, less tax	...	19	18 6	L.M.	...	12	0 0
One Year's Interest on Bond for £900 at 3½ %, less tax	...	27	17 11	I.F.	...	12	0 0
One Year's Interest on Bond for £800 at 3½ %, less tax	...	24	15 10	A.A.	...	26	0 0
One Year's Interest on Bond for £600 at 3½ %, less tax	...	17	17 0	K.L.H.	...	13	0 0
One Year's Interest on Bond for £600 at 3½ %, less tax	...	17	17 0	E.F.C.	...	4	0 0
One Year's Interest on Bond for £400 at 3½ %, less tax	...	11	18 0	M.B.B.	...	12	0 0
Income Tax reclaimed for 1915	...	15	6 0	E.B.	...	12	0 0
Bank Interest	...	13	2 2	S.J.C.	...	5	0 0
Donations	...	2	12 6	£147 17 6			
£198 3 1				By Cash at Bankers, Dec. 31st, 1915 :			
£726 3 11				Manchester and Salford Savings Bank	338	1	11
				Manchester and L'pool District Bank	240	4	6
				£578 6 5			
				£726 3 11			

INVESTMENTS.

Mersey Docks and Harbour Board, 4 p.c. Bond, repayable 1st July, 1924	£1300	0	0	Salford Corporation Gas Dept., 3½ p.c. Bond, repayable 13th Jan., 1916	600	0	0
Mersey Docks and Harbour Board, 3½ p.c. Bond, repayable 27th March, 1916	600	0	0	Salford Corptn. Dwelling-house Improvement Dept., 3½ p.c. Bond, repayable 18th Feb., 1916	600	0	0
Manchester Corptn. Improvement Dept. 3½ p.c. Bond, repayable 25th March, 1923	800	0	0	Salford Corptn. Dwelling-house Improvement Dept., 3½ p.c. Bond, repayable 28th Feb. 1918	400	0	0
Manchester Corptn. Improvement Dept. 3½ p.c. Bond, repayable 29th Sept., 1919	900	0	0				

We have examined the above written account and certify the same to be correct.

We have not examined the Securities owing to the absence abroad of one of the Trustees.

21st January, 1916.

LITTON, POWNALL, BLAKEY & HIGSON.
TEDBAR HOPKIN, F.R.C.V.S.

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Meetings, Second Wednesday, May, Oct. and January.

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1456.

JUNE 3, 1916.

VOL. XXVIII.

THE ANNUAL GENERAL MEETING.

The Annual General Meeting takes place next Wednesday at 12 noon. The attendance cannot possibly be a good one; and that is the more reason why everyone who can should help to make it a little less meagre. Those who do attend will find ample material for discussion. The Report covers a very full and important year's work; and one or two items in particular—such as the petrol question—might perhaps be more generally understood by the profession if they were discussed on Wednesday. On the whole, there is more to attract members to Red Lion Square this year than there has been at some previous annual meetings; and some at least should attend to re-inforce those very few old *habitués* who always seem able to be present.

A QUESTION IN VETERINARY INSPECTION.

At the meeting of the South Eastern V.M.A., reported on another page, a question was raised which appeared to be novel to most of those present, and probably will be equally so to the profession. Should a veterinary inspector, before declaring a horse which has been treated for mange cured, check his clinical examination by the microscope? The meeting answered the question with a negative; and few clinicians will disagree with the verdict.

When the history and the clinical appearances alike indicate that a case of mange is cured, the microscope is not at all likely to be of use. These conditions enormously increase the difficulty of discovering the parasite, which is not the easiest undertaking at any time. A positive microscopic result would be, to say the least, most unlikely; and, for that reason, a negative one could have no real value. The task of deciding when a case of equine mange is cured is not an easy one, and throws considerable responsibility on the veterinary inspector. It demands judgment, experience, and some consideration of the attendant circumstances as well as of the clinical appearances. But, when a case has fairly become a subject for the question "Is it cured?" it has passed the stage at which the microscope is of use; and local authorities should recognise the fact. This latter point—the possibility of a local authority holding a final microscopic examination desirable—was apparently the real reason for the question being raised at the meeting.

Local authorities should know—or be taught—to differentiate between necessary and unnecessary microscopic examinations.

ANÆSTHETICS AND THEIR SEVERAL USES.

We reprint this week further extracts from the medical journals on the uses of several anæsthetics, in continuation of those given at pp. 515-16. The results are, of course, in human practice, but they are in practice—not in the laboratory. The newer agents, hypochlorite solutions, and chloramine have so far justified the high estimate of their germicidal properties; and the values of some other agents are, perhaps, more clearly defined. The use of several antiseptics in series, advocated by Dr. Louis Mencièrè, and his "embalmmment" process appear to be fresh procedures. And there appears in these reports the experience familiar throughout medicine—that men claim high qualities for the agent with which they are most familiar. One very distinct factor is brought out—that the man who pins his faith to one antiseptic, and one only, manifestly works at a disadvantage compared with he who is able to meet varied infections with more than one weapon.

AZOTURIA.

Azotised urine. Azotise—to nitrogenise: to render nitrogenous: to deprive of life.

Why does this condition take place? What is the explanation?

An acute case came to my notice recently.

Subject: a grey mare, a vanner, about 16 hands high, 10 cwt., aged 6. Purchased in August, 1914, off the farm. A good worker; a healthy mare, never had any illness, as far as could be found out, had bred one foal and reared it.

Used in constant work up to four days before the attack, which occurred on a Monday morning. The mare left the stable at about 8 a.m., with a fair load, not a heavy one. It got, as near as can be judged, 1½ miles on the journey: then, on the level, it was noticed to ease up in its work, and began to drag the hind limbs.

She was let out of harness, and, without showing any pain, led back to a stable and a draught given of Ol. lini one pint, Ol. tereb. two ounces.

About 11 o'clock the mare went down, and from that time was unable to rise: she made several attempts to do so, but the hind quarters were useless. She sat up now and then like a dog, the hind limbs turned towards the offside almost at right angles. The conjunctivæ were injected, temperature 105. Muscles of the loins and back, and the gluteal muscles rigid: insensitive to the prick of a pin.

She was attended to through the day and night. Next morning there was no improvement. She

lay stretched out in great pain and constantly pawing with her fore legs, occasionally turning the head back towards the loins.

Diagnosis azoturia. Prognosis unfavourable. Mare could not be placed in slings: she was destroyed.

Post-mortem showed bladder full of blood—or what looked like it, although rather browner than ordinary blood. Kidneys, especially the right one, intensely inflamed, with the renal vessels blocked with a dark, semi-fluid, tarry-looking blood, and all around the kidneys the same. It looked as if the blood vessels of the kidney were ruptured. Other organs normal.

One gets acute attacks in horses occasionally, and, I think, more in mares than in geldings. I have had same conditions in Shire stallions. In the hunting season it is not uncommon, but the attacks are not so severe, and a dose of physic with a hot bran poultice, or hot cloths—a big horse cloth the best, and as hot as you can bear the hand in the water—to the lumbar region, with a sparse diet, generally suffices. But here was a case of the most acute kind occurring in a mare that had only partially rested four days prior to the attack.

Prof. Williams, in his *Medicine*, mentions hysteria as a cause. I could not discover that the mare was in season, and she did not show brain affected. I have had these acute cases in town or in Shire stallions in the early part of their season. Is this azoturia an anthracoid disease?

The comparative rareness of these attacks prompted me to contribute this note.

Plymouth.

P. G. BOND.

SUPER-PURGATION AND LAMINITIS.

I had overlooked the article (Laminitis from super-purgation), but having read it just now I cannot help telling you that in my opinion super-purgation is not at all the cause of laminitis, and that I think our German colleague is absolutely mistaken.

I have seen many similar cases, and shall give my interpretation of this one. The horse referred to suffered at first from colic—colic with great weakness of pulse, weakness of limbs (shown by a tottering gait), mucous bright red, pulse and temperature above normal. What symptoms are these? They are, without doubt, those of colic through poisoning by mouldy food. Mouldy foods, besides giving colic through indigestion, have after absorption a paralysing effect on the nerve centres—hence tottering gait, weak heart, and infiltration of the mucous, as in typhus fever. Later, the fore legs are in their turn attacked in the same manner; hence laminitis, as seen sometimes also in typhus.

Aloes is not responsible; for the many cases I had the opportunity to attend were treated by little and repeated doses of Bromhydrate of Arecoline in hypodermic injection, and yet in these laminitis occurred.

I thought it was not good for my English colleagues to suspect a drug so often employed as Aloes; and for that reason I have thought it well to send you this short note.

Jos. COZETTE.

3 Fauconberg Road, Chiswick, W.

MILK FEVER (?).

In connection with the case of so-called milk fever in a ewe, which Mr. Frank Cundall, of Shrivenham, reported in *Record* of April 29th, the following case may be of interest.

A small half-bred North Country ewe, my own property, was the last one of a small flock to lamb. She lambed early in May in a pasture where the grass was not rich. After lambing I took her from the others, and put her in an orchard full of rich succulent grass. Within twelve hours of her being in this orchard, I found her insensible on her side in a ditch. She showed all the symptoms of milk fever: eyes amaurotic, stertorous breathing, and complete insensibility. I inflated the udder with a small syphon and pump. Within one hour she was on her legs, and in an hour or so after showed no symptom that anything had been wrong.

This took place about three or four years ago.

H. WALPOLE, M.R.C.V.S.

Whixley, York.

ABSTRACTS FROM FOREIGN JOURNALS.

THE VIRULENCE OF THE BLOOD IN FOOT-AND MOUTH DISEASE.

Some authors affirm that the blood of animals suffering from foot-and-mouth disease is virulent; but other authors do not confirm this. Nocard and Leclainche say that such virulence is very feeble and difficult to demonstrate. Guiseppe Cosco and Angelo Aguzzi have undertaken extensive experiments upon the subject, the detailed report of which they promise to publish in future. In their present preliminary communication, they merely give a summary of their conclusions from their first series of experiments, in which they used 116 cattle. The conclusions are as follows:—

(1) The blood of animals suffering from foot-and-mouth disease is virulent through all the period in which fever lasts. The virulence is high—not lower, the authors think, than that of the products of the eruption.

(2) The red globules and the blood serum of affected animals, inoculated separately into cattle, are equally virulent.

(3) The defibrinated blood of the said animals, kept in an ice-house, preserves its virulence for a long time (over a month). The virulence of the red globules obtained from such blood has a greater duration than that of the serum of the same blood.

(4) The red globules, washed repeatedly in large quantities of sterile physiological solution, so as to eliminate all trace of serum, and then inoculated

under the skins of cattle, reproduce infection, even in the dose of 1 c.c. The inoculation of the same dose of serum is likewise capable of reproducing the disease in cattle.

(5) Inoculations in series of foot-and-mouth blood into cattle exalts the virulence.

(6) Infecting cattle in the ordinary manner (oral method), and using washed red globules as infecting material, does not appear to realise the reproduction of the disease.

The authors regard it as especially important to have securely established the high virulence of the red globules and its long duration. They now have at their disposal (1) a very pure infective material, which they are able to preserve for over a month, and (2) a cellular homogeneous mass, containing the virus in a state of purity, and which may be considered as a culture of the specific agent. This culture is capable of undergoing the treatments in use in the preparations of vaccines, which it is very difficult or absolutely impossible to practice with the exceedingly impure products coming from the localisations of foot-and-mouth disease, and with the filtrates of those products.

The authors are still working upon foot-and-mouth disease. Their present studies have taken origin in the work summarised above.—(*La Clinica Veterinaria*).

EXHAUSTION OF HORSES IN WAR.

Scheiber, being attached to the veterinary service of some army service columns, had occasion to observe numerous cases of exhaustion in horses. In general the cases were seen in animals which had been subjected for a long time (such as six months) to hard work, and had been insufficiently fed, and above all in horses which had been in bad condition from the time of requisition or had fallen away in consequence of gastro-enteric disorders. For the most part the animals were between eight and twelve years old, only exceptionally between four and eight years.

In accordance with the severity of the symptoms, Scheiber distinguishes three degrees of exhaustion, viz., slight, moderate, and severe. In slight exhaustion the horses are somnolent, constantly stop, show an uncertain gait, especially of the hind limbs, do not keep pace with the column, and sometimes fall to the ground and rise again after a short time. Horses affected with moderate exhaustion are unable to rise without assistance after resting, the hind quarters especially requiring support. In animals affected with severe exhaustion, in addition to the above-mentioned symptoms, there is absolute incapacity of standing, or else the animal falls suddenly and dies in a few minutes.

Reddening of the mucous membranes, absence of fever until death, weak pulse, accelerated breathing, and augmented cardiac activity, are common to all the various degrees of exhaustion. The appetite, however, is always fairly maintained, and the horses eat their rations until death, which is always rapid. Rectal examination yields negative results. The faeces are normal; and so also, at least with regard to colour, transparency, consistence, and odour, is the urine.

The slight or moderate degrees of the disease may not be dangerous, even when the attacks are repeated two or three times. In the severe form, on the other hand, the horses generally die suddenly, or else die, notwithstanding all treatment, at the end of 72 hours at most.

Post-mortem, no particular lesions were found, except some petechiae upon the epicardium.

As regards treatment, good results have been obtained by giving Camphorated oil in doses up to 150 grammes. In addition, the horses should be raised every day, the limbs should be rubbed with some cutaneous stimulant, and, if the attack has been overcome, the horse should have at least six weeks of rest, good feeding, and warm and dry stabling.—(*La Clinica Veterinaria*).

COMPLETE DETACHMENT OF A KIDNEY IN CONSEQUENCE OF VIOLENT EFFORTS.

Pinel has recorded the following unique case (*Jour. Méd. Vét. Zoot.*). An officer's horse, during some manœuvres in marshy ground, sank in the mire. The animal, making violent efforts, succeeded in extricating himself and gaining firm ground before the rider could dismount. From that day forth the horse, which appeared perfectly normal during his periods of rest, showed fatigue as soon as he did any work. This reached such a degree that he became useless for work, and he died soon afterwards.

The post-mortem examination yielded remarkable results. The right kidney, which weighed 785 grammes (= a little over 29 oz.) was absolutely normal as regards position, size, colour, etc.; but the left kidney was absent. Further search revealed a rounded mass, of a size approximating to that of a hen's egg, amongst the intestines. This body was smooth upon its surface, soft and oily to the touch, milky white in aspect, provided with a filiform prolongation, and weighed 270 grammes. An incision demonstrated the existence of an envelope half a millimetre thick, and only slightly resistant. The envelope contained a very homogeneous substance, the colour, consistence, and aspect of which resembled that of vaseline. This mass was really the left kidney, which had undergone fatty degeneration.

The novelty of the case lies in the fact that the detachment of the kidney was complete. This occurrence has not previously been observed in veterinary practice.—(*Revista de Veterinaria Militar*).

A CASE OF HAEMOPHILIA IN THE DOG.

Friedrich Schick, of Reichenau, Austria, has reported a case of haemophilia in a seven-year-old greyhound (*Tierärztl. Zentrabl.*, 1912). At the owner's request, Schick undertook to remove a foreign body from a wound on the inner side of this animal's left knee joint. The history was that, at the time of the original wound, the bleeding had been so severe that the veterinary surgeon then called in had great difficulty in stopping it. Schick only enlarged the wound a little, and removed the foreign body. The bleeding which now set in was so severe that Schick was endeavouring in vain to stop it from 9 a.m. to 6 p.m. Meanwhile the dog

had become anaemic, cardiac weakness set in, and only then did the bleeding come to an end. The dog's general condition was improved again by an injection of camphor, but the next day a hæmorrhage of several hours' duration appeared. This was allayed, but was repeated again in the evening, and also the next morning. Despite this the dog recovered, and the wound healed.—(*Berliner Tier Woch.*).
W. R. C.

SOUTH EASTERN VETERINARY MEDICAL ASSOCIATION.

[NATIONAL V.M.A. SOUTHERN BRANCH.]

A general meeting was held at the County Hall, Canterbury, on Saturday, May 13th. Mr. E. L. DIXON, President of the Association, occupied the chair, and there were also present: Messrs. W. Crowhurst, F.R.C.V.S., J. Crowhurst, F.R.C.V.S., Canterbury; Cecil Crowhurst, Maidstone; A. T. Crowther, Deal; H. P. Hogben, T. F. Hogben, Ash; W. W. Gulleford, Lympne, Hythe; E. Morgan, Faversham; and Theo. C. Toope, Hon. Sec. Apologies were received from twelve members for non-attendance.

The CHAIRMAN remarked that this was the first general meeting of the Association convened since May, 1914, with the exception of a meeting they had a fortnight ago, called by advertisement, their Secretary having been ill and unable to issue notices to each member. During the past two years the country had been involved in a great war. They little thought when they met in 1914 that their various social and intellectual pleasant gatherings, which they so much enjoyed, would have to cease for so long. They hoped to enjoy many more of those gatherings in the future, but he thought they would agree with him, taking everything into consideration, that they did wisely in not holding meetings of that Association whilst so many members were engaged on different Government work. About nineteen of their members were enrolled who are connected with the military, and another nine were doing civil work, in all, nearly thirty—more than half their number—engaged in connection with the war. They had, therefore, thought it futile to call meetings which would probably be badly attended. That day they met for the first time after nearly two years, and he wished to extend a hearty welcome to all present. He hoped that that and all future meetings they might hold would prove of the same instructive and pleasant character as those they had held in past days.

The SECRETARY read the minutes of the meetings held in 1914 and the one held a fortnight since.

Mr. J. CROWHURST, referring to the question of fees that was dealt with at the meeting of the Association in May, 1914, said he understood from one member that after treating an animal for parasitic mange he always made a microscopical examination to make sure that the animal had recovered. It had not been his custom to make a microscopical examination after treating an animal for the disease; and he did not think he had ever made a mistake—or he should have heard about it. He should like to hear the course adopted by other surgeons.

The CHAIRMAN said, at the termination of parasitic mange he never thought of making a microscopical examination of the skin if he was satisfied by the general symptoms that the disease did not exist. The parasite was difficult to find, but he thought after all the dressings it was only futile to make a microscopical examination.

Mr. H. P. HOGBEN said he always made a microscopical examination for safety, but the County Council would not allow them more than one guinea whether they examined two or three horses at one time. The fee allowed was one guinea, and as to the microscopical examination—they could make it if they liked.

Mr. J. CROWHURST said they were allowed 5s. per visit.

Mr. HOGBEN said that was so, but the fee of a guinea covered any microscopical examination that was made.

The CHAIRMAN said the question was whether it was absolutely necessary to make a microscopical examination at the termination of the treatment. It was not a question of fees, but it was a question of responsibility.

Mr. HOGBEN said he thought it was desirable to make a microscopical examination, for if anything should crop up afterwards they could then say they had taken every possible precaution.

The CHAIRMAN said he had never heard the matter discussed, and he did not know what was done in other parts of the country.

Mr. J. CROWHURST asked Mr. Hogben if he had ever found any case of parasitic mange after he had treated a case.

Mr. HOGBEN said every time he had made a microscopical examination he had found the animal free of the disease.

In order to test the feeling of the meeting on the question Mr. Hogben moved that it was desirable to make a microscopical examination, although he did not say it was necessary.

On being put to the vote, however, the motion was negatived, only Mr. Hogben voting in its favour.

The minutes of the previous meetings were then passed and signed.

The SECRETARY said the reason why they were so few in numbers that day was easily explained by the following list of members of their Association who had joined the A.V.C.:—Messrs. P. J. Austin (F.), R. C. Baxter, J. Bell (F.), A. C. Burton, J. B. Buxton (F.), L. B. Cole, W. Caudwell (F.), H. V. Dier, G. Dunkin, Maj. Edwards, R. Elliot, F. C. Golden, T. Hibbard, T. Huband (F.), E. M. Perry (F.), J. M. Richardson, Gerald Wachter, A. Whicher, and A. L. Wilson.

Besides these nineteen, the following nine were acting or had acted as civil veterinary surgeons, Transport Officers, etc.:—Messrs. J. Crowhurst (F.), Cecil Crowhurst, E. L. Dixon, J. B. Dier, Elmer Ebbetts, H. B. Eve, T. F. Hogben, E. Morgan, and Theo. C. Toope; and there might be others who were acting in some capacity in connection with the army. They could not possibly expect a large meeting with half their members doing Government work, and with nineteen of that number stationed in various parts of this country or on expeditionary work. As a matter of fact he only knew where to find two of the nineteen at the present time. The list that he had read had been compiled from the new Veterinary Register, and, therefore, was possibly correct, but two or three appointments had been made since the Register was put into print. He thought that Association had shown its patriotism beyond all other Societies in the kingdom with regard to the numbers who had joined up.

The CHAIRMAN said, although they congratulated the gentlemen mentioned who were doing the work necessary for the war, it lessened the number likely to attend these meetings, and, therefore, increased the responsibility of those left at home to make that Association continue. It was their duty to attend the meetings even at considerable personal inconvenience, to help to make up for the loss of those gentlemen who they knew could not be present, and if they wished to continue the work of the Association—and he hoped they did—they need all attend the meetings regularly. It was true their Association had become dormant, but now

they had started the meetings again they meant to put their shoulders to the wheel, and he trusted those who were left behind would attend the meetings as often as they could, even at inconvenience to themselves.

The CHAIRMAN referred to the death of the much lamented J. B. Martin, of Rochester, who was a member of that Association, and was known to most of them. He took it that some notification was sent to the family at the time of Mr. Martin's death.

The SECRETARY said he wrote to the family on behalf of the Association.

HUNTING MEMORIAL FUND.

The SECRETARY said a fund had been got together in memory of the late Mr. W. Hunting, and at their last meeting they decided to leave the matter over till their next meeting. That was now two years since. The fund, however, was still open. His view of the matter was that seeing that Mr. Hunting was a man whose utility to the profession was absolutely unsurpassed in recent years, at any rate, a contribution from the Association's funds should be sent to the memorial, even if only a small one. He said small, because they could ill-afford with their present low finances to give what was really deserving in honour of such a man. As Treasurer, he could spare three guineas, but if they went beyond that sum he was afraid they would reduce their funds too much, and their funds were not what they ought to be.

Mr. J. CROWHURST said it was a very laudable object and he would propose that they give a donation of three guineas.

Mr. T. F. HOGBEN seconded, and it was agreed to unanimously.

MARKET FEES.

Mr. GULLEFORD said, some little time ago he received intimation from the Superintendent of Police of the Elham division, that in future the time charged for journeys to sales was not to be allowed. He wrote to Mr. Prosser, Clerk to the County Council, pointing out to him that for many years—twelve years as far as his practice was concerned, he had always been allowed a reasonable sum for the journey. He had a letter from Mr. Prosser in reply saying that was wrong, and that in future the time actually spent at the sale was to be charged only. During the course of a correspondence on the subject Mr. Prosser said that a meeting of his Committee would be held shortly. That meeting had been held, and he (Mr. Gulleford) received a notice to the effect that the matter had been before the Committee, and that only the time spent at sales was to be charged for. Sometimes he had to go nine or ten miles to a sale, for instance, to Stelling Minnis, which was half way between his place and Canterbury. It was not a large sale, and he did not spend a very long time there, but he had to do fifteen or twenty miles getting to and from the sale. He had always charged for the time occupied in getting to the sale, but now he would only be allowed for his attendance at the sale, which, of course, would be one guinea, and the bare mileage. He said in his letter to Mr. Prosser that he had always charged the same since the new scale came out, and no intimation was given that the charge should be different in any way. In their work, as in every class of work, the expenses are heavier than they were; it costs more to keep a horse, horses are more valuable, and labour is more costly. As he pointed out in his letter, the one thing that saved the position was the minimum fee of one guinea, because under the old scale there was no minimum fee—they could only charge for the bare time of inspection. If this new rule held good the mileage one way came to only 2/6. When the new scale came into operation he received no intimation that any alteration was to be made in the method of charging.

Mr. H. HOGBEN said he was in the same position as Mr. Gulleford, because he always understood a visit

dated from the time he left home, but Mr. Prosser said that was not so, and they must only charge for the actual time spent at the sale.

Mr. J. CROWHURST said he was glad to hear the explanations from Mr. Gulleford and Mr. Hogben. Whatever might have been the fees in the past, the County Council met them very fairly when they approached them in regard to their fees which had been in existence some time. They wished to put the fees on a fair and reasonable basis, and at the time they thought they were very fairly met by the County Council. He thought the fee allowed them for going to a farm sale where there was only a small amount of stock which did not entail three hours' work was a reasonable one—a guinea: and in addition, for a visit ten miles out he got 10/-. It was fairly put to them that it was for attendance, and they could not construe the time that they were going to a place as attendance. He hoped, as inspectors, they would recognise that they had been met in a very fair way indeed, and he should be sorry to have to open this question again in any way so long as they got the fee of one guinea.

Mr. T. HOGBEN said he pointed out to Mr. Prosser that much of his time was taken up at home filling up the certificates for pigs. That work took up some time at home before he went to market. He had had no reply from Mr. Prosser, whether or not he intended to allow him to charge for that work.

Mr. J. CROWHURST said the work referred to by Mr. Hogben was all attendance.

Mr. T. HOGBEN said, on the previous evening he had just one hundred certificates to fill up, and it took him over an hour. That was work that could not be done at the market—it had to be done at home.

Mr. GULLEFORD said it meant to him a reduction of twenty per cent. on the fees granted in 1913.

The CHAIRMAN said that was a very serious matter to the gentlemen concerned. Personally, he was not interested, because he had nothing to do with markets, but he quite recognised what Mr. Gulleford said about the time occupied in covering the journey to and from a sale, and they could not be expected to do it for nothing.

The SECRETARY said he was wondering whether it would be well to write to the County Council officially or not.

Mr. GULLEFORD said he thought the matter ought to be brought before them, but unless the meeting was almost unanimous he should not be in favour of bringing it before the County Council.

The CHAIRMAN said as the meeting was prepared to accept the dictum of the County Council the matter dropped.

THE R.C.V.S.

The SECRETARY said the idea had struck him that they could assist the College out of its present difficulties by giving a donation to the funds. He was not saying he agreed with all the Royal College of Veterinary Surgeons had done, nor did he quite see why they were in the position they were in, but at any rate it was for the profession as far as possible to help them out of it. A large number of members of the profession were giving donations of one guinea, and if all members were to do likewise—he meant individually—the College would be no longer in debt or in danger. He would not say they were absolutely in debt, but they were on the verge of bankruptcy, and in another two years, without a new Act, the College would cease. It was left to them by their fore-elders, and not only left to them, but it was in what he might call a healthy condition. That was twenty-five years ago. There were many reasons why it had fallen into its present state. One was the lack of pupils, and the next was the increased cost of examinations, and there were other reasons. He thought that every member should

contribute a donation to augment the funds of the College.

The CHAIRMAN said they saw every week that members of the profession subscribed. It was a matter for the individual member.

The SECRETARY said he had brought it forward in order to take the opinion of the meeting as to whether it was advisable or not.

Mr. J. CROWHURST said it had been stated that the Government intended to make a grant to the College, but if the men at the head of the College exerted themselves to get that money from the Government it would be much more sensible than begging it from individuals, because the profession was not in a flourishing position at the present time. However, he took a broader view than that. It was not a question of subscribing a guinea, but one of principle. He could not understand that the College wanted them to subscribe when the existing fees of the College were bringing it to bankruptcy at the present time. Let the authorities of the College set their own house in order. In Scotland they did things differently and did not go round begging for money.

The CHAIRMAN said it was hardly a matter for the Association to discuss.

Mr. GULLEFORD said the Scottish College was on a par with the Royal Veterinary College. They were not dealing with the College at Camden Town.

The SECRETARY said he had brought the matter forward with a view to increasing the number of donations. That was his view.

Mr. J. CROWHURST asked how that would save the position.

The SECRETARY said the total income of the College was about £3386 per year,* and the expenditure had compelled the authorities to sell out Consols, but after the sale of those Consols he believed the College was still in debt.

Mr. J. CROWHURST said it would be unless the College lessened the expenses.

The SECRETARY said he believed the expenditure could be met if there were more contributions.

The CHAIRMAN said he should be pleased to give a guinea himself.

The SECRETARY said he would also be pleased to subscribe a guinea.

Mr. T. HOGBEN said he had already subscribed, but he thought the College might be managed better.

The CHAIRMAN said he did not know why the College was in such low water unless it was lessening the fees. If they knew the reason he believed they would all help.

The SECRETARY said he rather fancied something would be done to stave off absolute bankruptcy.

Mr. CROWHURST said the Government ought to help. There was no other country that did not finance the Veterinary College.

MOTOR TAXATION AND THE SUPPLY OF PETROL.

The CHAIRMAN referred to the increased cost of everything connected with the profession and said it was not only in drugs, but glass bottles, motor car licenses, and petrol had all gone up in price. He had a motor car for which he paid a tax of £6 6s., and that in future would be £18 18s., unless the Government treated them as they did the doctors, who paid only half the tax. He thought it was a gross injustice to the veterinary profession that they should have to pay a treble tax on

their motor cars. Petrol had advanced still further, but their clients were not willing to meet those extra expenses which they as a profession were called upon to pay. He thought the questions of the motor tax and the increased price of petrol were worthy of discussion to see whether something could not be done. It was a very serious matter to veterinary surgeons who kept motor cars—and they were obliged to keep them if they had a wide practice.

Mr. J. CROWHURST suggested that each member should approach his Member of Parliament to get his help in that matter.

Mr. T. HOGBEN agreed with Mr. Crowhurst, and remarked that if they approached their Members of Parliament and hammered away they might get some alteration.

The SECRETARY said some counties treated veterinary surgeons in the same way as they did medical practitioners, but Kent was not one of these counties, and as long as Kent could extract the full licence Kent would.

Mr. J. CROWHURST said the veterinary surgeons had a good friend in Mr. Ronald McNeill, and he was sure he would do what he could for them in those matters. In the matter of the motor car tax and the price of petrol, all they asked was to be treated in the same way as the doctors were.

The SECRETARY mentioned that he motored 2500 or 2600 miles a year doing military work, besides his own requirements, and he was having the greatest difficulty in getting motor spirit, but he understood the President of the College was making some arrangement so that veterinary surgeons could get supplies.

It was unanimously decided that each member should approach the Member of Parliament for his district to ask him to help the profession on the question of the motor car tax and also on the question of the increased cost of petrol and its supply.

Financial. The TREASURER reported that owing to the absence of so many members on service many subscriptions for the year 1914 were outstanding, in fact none had been received since their last meeting in May of that year. They still had the sum of £12 to the good at the bank, after paying the expenses of the general meeting and two special meetings held early in 1914. The outstanding subscriptions would be difficult to get in until after the war, as it was almost impossible to get in touch with members serving with the Expeditionary Forces. As to the year 1915, as there were no meetings held or business done it was resolved to regard it as *non est* for subscriptions, and it was hoped that those for 1914 would be forthcoming eventually.

The next meeting. It was resolved this should be held at Margate on the 6th September next, the members present thanking their President heartily for the invitation, which is to include the ladies.

A vote of thanks to the President concluded the business of the meeting.

THEO. C. TOOP, Secretary.

THE SLAUGHTER OF CALVES.—At a recent meeting of the Hull Corporation Markets Committee, the Town Clerk and the Chief Food Inspector (Mr. Jas. McPhail) called attention to the difficulty of obtaining any good results under the Live Stock Order of 1915, which prohibits the slaughter of calves and cows in calf. It was stated that contraventions of the Order were very frequent, and could not be dealt with effectively so long as it remained in its present form. The Committee resolved that the Town Clerk and Chief Inspector should interview the Local Government Board, point out the growth of the evil, and urge the advisability of amending the Order.

* The Annual Reports, R.C.V.S., show the income for the past year £1916 13s. 2d., and for the previous year £2300 11s. 7d. Other statements in this conversation are misleading. There are always some men who will accept and repeat such statements without attempting to verify them.—Ed.

More about Anæsthetics: and some wound surgery.

The following extracts are from an article in *The British Medical Journal*, by A. Laphorn Smith, M.D., M.B.C.S., late Surgeon-in-Chief, Lady Eva Wemyss Hospital.

"Pus consists of the great army of dead phagocytes killed by the microbes. It costs much blood to provide these phagocytes, and there is a limit to the number that the patient can furnish. Pus is full of phosphates and some iron, and a patient who is losing from 8 to 16 oz. a day cannot go on very long if these substances are not replaced. He becomes weak, develops neuralgic pains which demand morphine, and he dies from exhaustion, his heart growing weaker and weaker from want of food. The most digestible form of phosphates and iron are hypophosphites or glycerophosphates.

Nicotine poisoning. The responsiveness of the cerebro-spinal system in many of the wounded, at least, has been weakened by nicotine. The bowels are stagnant, and the decomposing food gives out nauseous gases and poisons, and the stomach works feebly in digesting meat or casein. If an excessive tobacco smoker comes to us in civil life suffering from nicotine poisoning we give him comparatively large doses of *nux vomica*, with remarkable results. If a wounded man is poisoned even to blindness, of whom I have seen several, comes under our care his wound will heal in half the time if we get the nicotine out of him and stimulate the paralysed trophic nerves with strychnine and electricity. If his wounds are suppurating profusely give hypophosphites, and if he has sudden spurts of temperature give quinine.

Antiseptics. As to antiseptics, I have great confidence in potassium permanganate, but I have seen excellent results from hydrogen peroxide and also from carbolic acid. I have personally put potassium permanganate to the most severe test possible, only after my confidence in it was absolute. I have been called in consultation to cases of puerperal septicaemia in the pre-rubber glove days, and when I had to perform several abdominal sections on the same day. I blackened my hands and arms the colour of mahogany with a strong solution of permanganate and whitened them in solution of oxalic acid, and then in the ordinary boric solution and alcohol; the cases all recovered.

Permanganate has the great advantage that it is not a poison if used externally. While in Paris, the chief surgeon of one of the great French hospitals asked me what I would suggest in the case of a soldier with gas gangrene whose foot he had amputated; the wound had not united at all; it fell open as soon as the stitches were removed. The odour was sickening. I suggested putting the foot into a rubber bag filled with a strong solution of permanganate for twenty-four hours. From the first moment, I learnt, there had been no more odour and the man began to improve.

Recently I was in charge of a case of carbuncle of the neck which poured out enormous quantities of acrid pus which burned the surrounding skin and started a crop of subsidiary boils. The man was exhausted with pain and suppuration, and was going downhill rapidly. Under an anaesthetic I made a two-inch cross incision and plunged my gloved finger into the cavity as far as the second joint. A hole for drainage was made at the most dependent part, and a wick inserted. Then a teaspoonful of finely powdered permanganate was poured into the cavity, which had been thoroughly curetted to remove the pyogenic lining. The powder was pushed into every crevice with a piece of cotton on a forceps, some gangrenous skin and cellular tissue removed with scissors, and the wound was packed with a strip of gauze. It was left alone for a few days, during which

the man rapidly improved, and when the wound was washed out there was a healthy pink granulating surface, but almost dry. At the end of ten days he was out and about.

Heart surgery. While visiting the Hôpital du Panthéon, in France, I witnessed the removal of a bullet from the pericardium behind the heart by Dr. d'Ardenois. In fifteen minutes the skin and muscle over the heart had been incised and lifted up; the ribs nipped through and lifted up on their joint with the sternum; the heart lifted out of the pericardium, all the time throbbing so strongly as to knock the operator's hand away when he tried to catch it; the bullet found, caught, and wriggled out of its bed; the heart put back, ribs sewn together, muscles readjusted, and skin closed carefully. The accuracy of the X-ray picture in front and profile showed where the bullet was to a nicety.

Gaping wounds. Sometimes, for various reasons, we did not receive our cases for a week. Many of these were deep, clean cuts, gaping widely, granulating, and bathed with pus. In these cases it was our invariable rule to thoroughly cleanse them with hydrogen peroxide, which cleanses without harming the granulations, and then to pass a silk-worm-gut stitch far back from the edge of the wound and a quarter of an inch under it, and so to embrace the whole raw surface in a series of deep loops. When these were tied, the granulating surfaces were brought firmly together. No bad results followed. There was a little suppuration without temperature, because we drained with a few strands of silk-worm-gut at the bottom. The country was saved at least two weeks loss of each man so treated, for in a few days, or a week at most, the wound was healed, instead of taking a month to fill in with granulations.

Extracts from an article on "Embalment of septic wounds in cases of grave disorganisation of limbs," by Dr. Louis Mencièr, of Rheims.

"For twenty years I have seen wounds of the limbs of all kinds and from all causes, but never have I seen wounds take the course that they do in the run-down patients living under the present conditions. I consider that a few aseptic or antiseptic washings and dressings will not suffice, although they may be enough in other circumstances to preserve the limb. I spent a month in a hospital in the rear, where, for reasons not necessary to state, antiseptics was nearly impossible—a hospital in course of formation, operators not very enthusiastic, difficulties of supply, asepsis almost exclusively employed in operations and dressings, at most a few washings with permanganate. The results were deplorable, heartrending, upsetting all my recollections and all that I knew and had seen of the surgery of the limbs.

When I was called to the head of a surgical centre in a unit where I could dispose of powerful antiseptics I found once more the conservative surgery to which I was accustomed. Except for the cases of gas gangrene and acute septicaemia I was able as in time of peace to preserve a smashed limb, an elbow, a humerus broken up in the midst of an intricate and septic wound, or a fracture of the thigh complicated by comminution and septic wounds. In a word, without trying to be conservative always, I am able to preserve the limb often or almost always.

The wounded man arrives, let us say, with a septic, intricate wound, with the bone splintered. The treatment must be economical of tissues, atypical operation, removal of loose splinters and of sharp edges likely to wound vessels; cleansing of the wound, above all multiple incisions well placed; drainage of the wound, successive lavage with the three antiseptics—sublimite 1 in 1000, carbolic acid 1 in 40, and peroxide of hydrogen 1

in 3. Why these three antiseptics? Because all germs, spores, and microbes, whether anaerobic or aerobic, and not equally sensitive to the three. For the wound holds all sorts of undesirables, and one must give it what it wants for each. Each of the three antiseptics is particularly adapted to a peculiar microbial variety. Successive lavage of the wound with the three antiseptics, such is the first antiseptic dressing, which acts not only antiseptically, but in a mechanical manner in drawing out pus and all sorts of débris.

There remains the permanent dressing; in our practice it holds a place apart, because I do not hesitate to state that it changes the aspect and the course of wounds, and that it is the best aid to conservative surgery that I have been able to find after trying everything. Iodoform, dear to the old-fashioned, associated with guaiacol, eucalyptus, and balsam of Peru, forms an application which changes the course of healing of the wounds, often of the most septic, and gives unlooked-for results. Hospital gangrene, atonic sanious wound disappear to give place to a wound which is bright carmine-red, with fleshy, well-nourished granulations, a wound no longer septic, but accompanied by healing, which has sometimes seemed to me extremely rapid. Such was the case of a rifleman, who had a hideous, infected wound of the calf with all the muscles hanging as if detached by a rake. I showed this patient at an inspection in the state described, and I showed him again three weeks later with a calf of normal form and almost completely cicatrised. A Zouave, whose forearm was saved, when amputation had seemed at first the only possible course is an instance in point; another Zouave, who was brought in with a deep intricate shrapnel wound of the shoulder, the bone smashed, and draining badly, occurs to my mind, his wound changing appearance fast and becoming covered with healthy red granulations, a patient whom I could evacuate quickly. These wounds, had they been in my other unit, where antiseptics was practised badly or not at all, would not have healed, and after operation would have remained unhealed.

The following is the treatment recommended: Successive washings of the wound with the three antiseptics after atypical operations when, as often, necessary. Permanent dressing of the wound with gauze wicks soaked in the solution (A). For three or four days wash again with the three antiseptics, after which, remembering the susceptibility of the cells, only wash with hydrogen peroxide 1 in 3 or 1 in 4, and again embalm. Repeat the dressing daily. It is a mistake to advise that the dressings should not be removed. A wound which is closing up necessitates an intense phagocytosis, an eruption of white cells which clog the wound and which form a liquid which it is always best to evacuate in order to avoid resorption. It is for this reason, too, that you must not close the wounds, but drain them freely with glass drains if, more lucky than I, you can get them. Embalment of wounds thus, following the formula given further on, is a powerful antiseptic deadly to microbes but sparing the cells, calling forth the phagocytes and constituting a stimulant to the wound. It is the means which has succeeded best with me after having tried nearly everything—formol, salicylic acid, tincture of iodine, and iodine vapour itself. I do not deary tincture of iodine employed for a first dressing, but this method cannot be repeated, for if it kills the microbes it also causes necrosis of cells and leaves a surface which is an excellent culture medium, but not a good defence.

	Formulae	(A)	(B)
Iodoform	... grammes	10	10
Guaiacol	... "	10	10
Eucalyptol	... "	10	10
Balsam of Peru	... "	30	30
Ether	... "	100	1000

—used to soak the wicks of gauze or to be injected into the sinuses with a Roux's syringe. If you lack hydrogen peroxide, or if you are simply prodigal, you will do well with solution (B) for washing the wound before embalmment. In case of idiosyncrasy or intolerance after a few days' treatment (which is exceptional) omit the iodoform from the formula.—*Translated for The Lancet.*

ARMY VETERINARY SERVICE

WAR OFFICE, LONDON, S.W.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, May 26.

REGULAR FORCES. ARMY VETERINARY CORPS.

Late temp. Lieut. to be temp. Capt.:—F. J. Delaine (May 12).

Temp. Lieuts. to be temp. Capts.:—J. E. Williams (Mar. 24); A. J. Barbeta (May 17).

To be temp. Lieut.:—C. O. A. Anderton (May 17).

To be temp. Lieut.:—G. O. R. Grey (May 9).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Christian names of Robert Stanley Lee Beaumont are as now described, and not as previously notified.

Personal.

SAUNDERS.—On Saturday, the 20th May, at Hove, the wife of Major C. G. Saunders, C.A.V.C., of a son.

CORRESPONDENCE.

THE TAX ON MOTOR LICENSES.

(The following letters from Members of Parliament have been forwarded to us for publication.)

House of Commons,

May 19th, 1916.

Dear Sir,—I am in receipt of yours respecting the proposal that in the Finance (No. 2) Bill an amendment should be inserted "providing for a rebate or repayment of half the license duty on Motor Cars used by Veterinary Surgeons for professional purposes."

It seems to me that the Veterinary Profession should rank with the Medical Profession in such matters, and I trust the Chancellor of the Exchequer will accordingly be able to accept the amendment to be moved by Mr. John O'Connor, M.P.—Yours sincerely,

GEO. H. ROBERTS.

H. Buckingham, Esq., M.R.C.V.S., Norwich.

Bellevue Place, Clonmel,

29th May, 1916.

Dear Mr. Hynes,

I have received the memorandum signed by you and other members of the veterinary profession in the County of Waterford with regard to obtaining rebate of half licence duty, in accordance with the amendment put down by Mr. John O'Connor, M.P. If possible I will be present when Mr. O'Connor's amendment comes on, and if necessary I will not only vote but speak in favour of it.

Yours faithfully,

C. P. Hynes, Esq., Lismore.

J. J. O'SHEE.

House of Commons,
May 22nd, 1916.

Dear Mr. Dayus,

I beg to acknowledge the receipt of your letter. I spoke in the House of Commons for the purpose of getting the tax reduced in the same way as the Doctors, but this was before the war.

I am enclosing a question I put down last week, which was not answered till to-day. If able to attend the House I shall, of course, support Mr. John O'Connor.

Yours very truly, ROWLAND HUNT.

C. E. Dayus, Esq., Craven Arms.

For Thursday, 18th May.

Mr. Hunt.—To ask Mr. Chancellor of the Exchequer, whether, in view of the fact that veterinary surgeons are of necessity compelled to keep motor cars of high horse-power for their business, he could see his way to reducing their motor tax by half.

Answered on Monday, 22nd May, 1916.

This question, together with other questions relating to the motor car duty, is being duly considered.

43 Harrington Gardens,
London, S.W.

Dear Mr. Bibbey,

I have your letter. I have no doubt that you have seen that Mr. McKenna has promised to consider the case for the veterinary surgeons. I am in hearty agreement with you that there should be no additional taxation put upon their motor cars, which are, in their case, an absolute necessity in order to carry on their profession.

Yours faithfully,

Herbert Bibbey, Esq. J. F. L. BRUNNER.
Winsford, Ches.

Donations to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donations for 1916 to the College funds:—

J. Aitken, Chester-le-Street	£1 1 0
R. G. Anderson, Major A.V.C.	1 1 0
T. S. Atkinson, Douglas, Isle of Man	1 1 0
W. Awde, Major A.V.C.	2 2 0
R. Barron, Blandford	1 1 0
J. R. Baxter, Lechlade	1 1 0
S. Beeson, Hereford	1 1 0
C. Blackhurst, Broughton, Preston	1 1 0
A. Broad, London	1 1 0
J. Broad, London	1 1 0
S. S. Broad, London	1 1 0
M. G. Byerley, Greenwich	
R. W. Carless, Stafford	1 1 0
W. S. Carless, Major A.V.C.	1 1 0
J. C. Coleman, Swindon	1 1 0
F. H. W. Cundell, Swindon	1 1 0
E. H. Curbishley, Alderley Edge	1 1 0
W. Dotchin, Newcastle-on-Tyne	1 1 0
W. T. Edwards, Neath	1 1 0
G. Elmes, St. Albans	1 1 0
J. Fox, Capt. A.V.C.	1 1 0
G. H. Gibbings, Tavistock	1 1 0
P. Gillespie, Salford	1 1 0
W. W. Goldsmith, Hitchin	1 1 0
J. F. Healy, Midleton, Cork	1 1 0
H. G. Hewetson, Southport	1 1 0
D. R. Hoddinott, Evesham	1 1 0
T. Holmes, Bourne, Lincs.	1 1 0
R. Hughes, Oswestry	1 1 0
J. R. Jackson, London	1 1 0
H. D. Jones, London	1 1 0
J. B. Kay, Shrewsbury	1 1 0
W. W. Kerr, East Dereham	1 1 0
H. Kirk, Lieut. A.V.C.	1 1 0
G. C. Lancaster, Capt. A.V.C.	1 1 0

W. L. Little, Capt. A.V.C.	£1 1 0
W. E. Livock, Newmarket	1 1 0
G. Lockwood, Peterborough	1 1 0
J. J. McCormack, Grange, Roscommon	1 1 0
J. McKinna, Huddersfield	1 1 0
W. R. McKinna, Huddersfield	1 1 0
J. H. MacLaren, Ebbw Vale, Mon.	1 1 0
J. Malcolm, Birmingham	1 1 0
C. A. Malvisi, London	1 1 0
A. E. Mettam, Dublin	1 1 0
C. Morgan, Dover	1 1 0
H. J. Parkin, East Ham	1 1 0
H. Pollard, Wakefield	1 1 0
J. W. Pollock, Lockerbie	1 1 0
E. H. Pratt, Northallerton	1 1 0
Prime & Sons, Upper Norwood	1 1 0
W. C. Prudames, Capt. A.V.C.	1 1 0
F. Roche, Capt. A.V.C.	1 1 0
J. G. Runciman, Cambridge	1 1 0
F. G. Samson, Mitcham	1 1 0
Robert Scott, Hawick	1 1 0
C. Sheather, London	1 1 0
C. H. Sheather, Lieut. A.V.C.	1 1 0
S. L. Slocock, Capt. A.V.C.	1 1 0
P. W. Dayer-Smith, Major A.V.C.	1 1 0
J. Spruell, Capt. A.V.C.	1 1 0
A. C. Stewart, Cardiff	1 1 0
F. W. Taylor, New Ross, Wexford	1 1 0
J. Thomson, Bervie	1 1 0
L. C. Tipper, Moseley, Birmingham	1 1 0
J. B. Tutt, Winchester	1 1 0
G. W. Weir, Capt. A.V.C.	1 1 0
F. W. Willett, Staines	1 1 0
J. Willett, London	1 1 0
M. E. Williams, Ton-Pentre, Glam.	1 1 0
H. H. Worrow, London	1 1 0
E. H. Wyly, Capt. A.V.C.	1 1 0
Previously acknowledged	261 2 0

£337 15 0

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donations are reported:—

R. G. Anderson, Major A.V.C.	£1 1 0
R. Barron, Blandford	10 6
J. H. Bennett, Romford	1 1 0
A. Broad, London	1 1 0
E. H. Curbishley, Alderley Edge	10 6
G. Elmes, St. Albans	1 1 0
P. Gillespie, Salford	1 1 0
W. R. McKinna, Huddersfield	1 1 0
J. E. Miller, Harwich	1 1 0
A. Over, Rugby	1 1 0
R. W. Raymond, Colonel A.V.S.	3 0 0
C. Sheather, London	5 5 0
S. L. Slocock, Capt. A.V.C.	1 1 0
L. C. Tipper, Moseley, Birmingham	5 0 0
Previously reported	158 12 3

Total £182 7 3

Army Rank in U.S.A.

A leader in the May issue of *The Journal, American Veterinary Medical Association*, states that the Veterinary Section of the Army Bill has been passed through the Congress for the third time, for which thanks are mainly due to Congressman Hay.

A later telegram announces "Senate passed amendment giving rank, including major, for veterinarians."

. It will be remembered that for years past there has been a steady effort of the profession to obtain a status in the U.S.A. army, which has been noted in our pages from time to time. We may now congratulate our confrères on a definite result.



Capt. Dunlop was a student at Glasgow Veterinary College and after qualifying there went into practice at Thornhill, Dumfriesshire. Immediately on the outbreak of war he offered his services to the Army and was given a commission in the Special Reserve. September 1914 found him attached to the 2nd Division Royal Field Artillery with whom he has been ever since.

A man of magnificent physique, Capt. Dunlop was a well known footballer and athlete in his student days and played in such famous "soccer" teams as Queen's Park and Glasgow Rangers. At Rugby also he played for Bishopbriggs. On going to Thornhill he resumed playing, when business allowed, for the local club who soon, mainly by his efforts as player and president, took a very prominent part in Border football. The season before the war he captained the Dumfriesshire county team, and was described as the finest player on the field. This past winter he ran the Divisional Football Tournament at the front, and himself played in the artillery team, which was beaten in the final by the 17th Middlesex (Footballers' battalion). Of a bright and cheery disposition, Capt. Dunlop is very popular, and his many friends will learn with delight that he has shown the same gallantry in the "great game" as he was wont to in those lesser ones before the dark days of the war.

Capt. Dunlop was in the Lancashire Yeomanry for some years.
I. J. D.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended May 27	5	5					35	83	1	109	461
Corresponding week in											
{ 1915 ...	4	5			1	1	27	52	4	121	672
{ 1914 ...	8	8			2	2	22	31		127	1332
{ 1913 ...	7	7			3	3	53	106	1	60	691
Total for 22 weeks, 1916 ...	279	324	1	24	21	62	1383	3216	173	2156	6887
Corresponding period in											
{ 1915 ...	326	363			14	19	1332	1751	155	1640	8339
{ 1914 ...	392	418	11	74	42	89	1257	2247	144	1770	17926
{ 1913 ...	282	304			74	219	1502	3082	120	991	14493

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, May 23, 1916.

† Counties affected, animals attacked :—
Excluding outbreaks in army horses.

IRELAND. Week ended May 20							Outbreaks			
...	...	...	...	...	...	...	...	1	4	41
Corresponding Week in										
{ 1915 ...	...	...	...	...	...	...	2	8	5	35
{ 1914 ...	...	...	1	11	...	...	2	6	4	53
{ 1913 ...	...	...	...	...	...	...	...	6	3	14
Total for 21 weeks, 1916 ...	2	6	...	...	...	...	29	212	123	656
Corresponding period in										
{ 1915 ...	1	1	...	...	1	3	20	238	121	735
{ 1914 ...	1	1	74	841	...	...	43	330	102	509
{ 1913 ...	...	...	...	...	...	...	83	284	65	395

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, May 22, 1916

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1457.

JUNE 10, 1916.

VOL. XXVIII.

THE ANNUAL GENERAL MEETING.

The Annual General Meeting was as usual a quiet one. It was almost inevitable that the attendance would be very small; the Councilmen, though far from being strongly represented, were nearly as numerous as the ordinary members. There was very little discussion, but what did take place was distinctly important; and members should read and remember what the President had to tell the meeting regarding the supply of petrol and the petrol rebate. His utterances, which really form the only noteworthy feature of the meeting, require no comment. Nothing more remains to be said of the proceedings except this—that even the special conditions could not wholly excuse the poverty of the attendance.

GLANDERS.

The official returns of glanders are showing remarkable fluctuations this year. In the first sixteen weeks of the year—up to and including the week ending April 15—there were 21 outbreaks against 11 in the corresponding period last year. For fully six weeks afterwards not one outbreak occurred; and thus the single outbreak in the West Riding of Yorkshire, reported this week, is the first in the kingdom since the earlier half of April. This is a lull quite unprecedented in the history of glanders in Great Britain. It is only within very recent years that even single blank weeks have begun to occur; and, though in the last year or two they have become more common, we have never before had a blank period approaching six weeks.

It is not quite easy to explain why the disease, after increasing so greatly upon last year's returns for three and a half months, should show so sudden and marked a subsidence; but probably the severe weather of the early months of this year, with its effect in developing latent cases, had a good deal to do with it. It will be interesting to watch the course of glanders for the rest of the year. The present returns still exceed those of the same period last year; but, at this season, something like the lull of the last few weeks may very well continue for a considerable time. In that case it is possible that glanders, which has shown more or less decline every year since the institution of the present Glanders Order, may still show a slight one at the end of 1916, though most other scheduled diseases are increasing. Last year's total return was 50 outbreaks; this year, so far, we have had 22 outbreaks in 23 weeks.

THE ARMY.

This week brings the news that at least two veterinary officers were with the British force at Kut, and now are prisoners in Turkish hands. These, we think, are the first of our members who have had the ill-luck of being put out of action in this way during the present war. On the other hand, we continue to gain a share of military rewards. The list of "Birthday Honours" just published contains a number of veterinary names, some of them well-known to the profession.

On the whole, our profession has received its fair share of recognition so far as the war has gone. So large a proportion of military honours in war time are awarded for gallantry in the field, and so many veterinary officers seldom or never get the chance of distinguishing themselves in this respect, that we cannot expect them to be rewarded in such numbers as the officers of some other departments. Medical men, for instance, gain more honours than we do; but the medical casualty list throughout the war shows how much more often they are exposed to danger than we are.

There is another ground on which military honours are awarded—professional competence and diligence. We do not expect that veterinary deserts in this respect will be inferior to those of any other branch of the army; but rewards for general good work are perhaps better given after a campaign than during its course. When the war ends, no doubt there will be a final award of honours, of which we expect our profession to gain a good share.

EQUINE INFECTIOUS PARAPLEGIA.

Cadéac, who has previously written upon the same subject, published a further article upon the disease called by this name (*Journal de Méd. Vet.*, 1914). It is a disease of enzootic character affecting the horse and ass, and is characterised clinically by paresis or paralysis of the hind quarters, and anatomically by congestive and haemorrhagic alterations of the spinal cord.

Its history is quite recent. It has been observed especially in France, and many cases have also been seen in Germany, Sweden, and Denmark. Perucci has described it in Italy, and Burke has found it very diffused in India.

It appears that the causal element of this affection is a streptococcus (Schlegel, Zwich, Perucci) which only in some cases, when injected intravenously, causes an infection which recalls infectious paraplegia. Natural infection occurs by the genito-urinary apparatus or by the digestive tube, and the infection is effected by the intermediation of litter

and of grooming implements. Granted that infection occurs by the genito-urinary apparatus, it follows that mares should form the major proportion of affected animals; and this was found to be the case in a series of cases collected by Commeny. Commeny's cases numbered 108 animals, of which 80 were mares; of the 108 cases, 37 were fatal, and of these 34 were mares. The infection may, however, occur by the digestive tube also. The period of incubation is short; Sorrain fixes it at four days.

The earliest symptoms are those of a certain difficulty of movement; and then the first signs of a localisation appear. Three forms of the disease are distinguished, in accordance with the localisation, *viz.*, the *bulbar*, *brachial*, and *lumbar* forms.

The *bulbar* form was first observed by Stietenvott in three horses which died in from seven to twelve days, and by Thomassen, who has observed it in an epidemic form in young Belgian and Dutch horses. In this form of the disease, labio-glosso-pharyngeal paralysis is observed, and renders mastication difficult and deglutition almost impossible. These symptoms become exaggerated, and the paralysis becomes complete in one or two days. The lips and the tongue become pendulous, and the respiration is slowed. The animal falls, remains lying upon its side, and dies without convulsions—sometimes in twenty-four hours, or in from two to three days.

The *brachial* form, at the commencement, is characterised by a severe lameness of the fore limbs, in which the gait resembles laminitis. The horse falls upon its knees, then the paralysis progresses and involves the hind quarters also, and the animal remains lying until death.

The *lumbar* form is characterised by an incoordination of the movements of the hind quarters. The limbs are unsteady and crossed, the joints show exaggerated flexion, and trotting is impossible. The body is lowered at the least pressure. The urine is turbid and viscous, and sometimes resembles that of haemoglobinuria.

In all three forms the disease appears suddenly, and its evolution may be peracute, acute, or sub-acute.

The course of the peracute form recalls that of paroxysmal haemoglobinuria. The animals fall suddenly and die in some hours, presenting a dark colouration of the mucous membranes.

The acute form often evolves in twenty-four hours, and never lasts longer than three days. In this form there is paralysis of the bladder, which is manifested in the female by incontinence of urine. The appetite is still preserved, the temperature is not elevated, the mucous membranes are normal, and the great functions are regular, contrasting with the paresis of the hind quarters.

The paralysis follows an ascending course. The symptoms seem to become localised in the nervous centres. The bulbar lesions produce disturbances of breathing, the jaws become fixed, the voice is lost, the lips become swollen, and the animal succumbs to a secondary cerebro-spinal meningitis.

When the affection has a benign evolution, the symptoms lessen a little at a time. Recovery takes place in from two to six weeks; but the convalescence is long, and the animals can only return to their accustomed work after two or three months.

The lesions, at the beginning, are localised in the vagina and in the bladder. The lips of the vulva are oedematous; and the internal aspect of the thighs and the mammary glands show engorgement. The mucous membrane of the vagina is infiltrated, covered with a mucous exudate, and strewn with sanguineous coaguli. The spinal cord and its envelopes are congested over a varying extent of the lumbar, brachial, or bulbar region; sometimes the grey substance is disintegrated, and its fragments are surrounded by a dense orange-coloured liquid.

Diagnosis is based upon four points, *viz.*, paralysis of the hind quarters, the emission of turbid viscous urine, tumefaction of the external genital organs, and the contagious nature of the affection. In spontaneous cases it is often difficult to distinguish this disease from paroxysmal haemoglobinuria; but the tumefaction of the genital organs and the absence of haemoglobin from the urine are characteristic of infectious paraplegia. Cerebro-spinal meningitis (Borna disease) is differentiated from infectious paraplegia by the convulsive contractions of the muscles of the superior cervical region.

Treatment is both prophylactic and curative. Such prophylactic measures as isolating the animals, disinfecting the stables, and evacuating infected premises, are indicated; and it is also necessary to disinfect the grooming instruments, destroy the sponges, and carefully renew the litter every day. From a curative point of view, various treatments have been suggested. An abundant bleeding has given good results in most cases. Artificial serum, anti-streptococcic serum, caffeine, ether, and the administration of nux vomica, or the injection of strychnine give good results.—(*La Clinica Veterinaria*).

DILATABILITY OF THE ŒSOPHAGUS IN THE DOG.

Darnaud records this case (*Rev. Vét.*). He was called to a Gordon setter two and a half months old, which refused all food. There was hardly any history, except that the dog was a very gluttonous one. The same day, before an emetic was given, the animal regurgitated a triangular fragment of bone, the three median sides of which measured respectively about 2-2/5 in., 2-4/5 in., and 3-1/5 in. Despite the irregular form and rugged edges of this bone, its forced passage through the œsophagus did not appear to have caused any lesion; for there was not the least trace of blood upon it when expelled, nor any symptoms of œsophagitis. The case exemplifies the extreme dilatability of the œsophagus in the carnivora.—(*Revista de Higiene y Sanidad Veterinaria*).

W. R. C.

Royal College of Veterinary Surgeons.

ANNUAL MEETING.

The Seventy-third Annual General Meeting was held at the College, 10 Red Lion Square, London, W.C., on Wednesday, June 7, 1916, Mr. F. W. Garnett (President) in the chair.

Apologies for absence were announced from the following Members of Council:—Mr. J. Clarkson, Mr. P. S. Howard, Mr. J. McKinna, and Mr. R. C. Trigger.

The SECRETARY read the minutes of the previous Annual Meeting, which were confirmed.

ELECTION OF COUNCIL.

The SECRETARY read the following report of the Scrutineers:—"Election of nine Members of Council, June, 1916. We, the undersigned Scrutineers, certify that the votes recorded in the Voting Papers for the several candidates nominated for election to the Council are as follows:—

M'Fadyean	777	Thomson	557
Garnett	750	Burt	497
Trigger	656	Gofton	441
Pringle	643	Wilson	434
Clarkson	628	Emery	398
Share-Jones	586		

There were five spoilt papers and 46 papers were received too late.

(Signed) Ernest A. Prudames H. D. Jones
Bernard Gorton A. Duff Dunbar
G. Vincent Slinn J. Basil Buxton."

The PRESIDENT: I have now to declare that the following have been duly elected members of Council:

M'Fadyean, Garnett, Trigger, Pringle, Clarkson, Share-Jones, Thomson, Burt, Gofton, and that the last-named, in accordance with the recent Charter, takes the place of the late Prof. McCall.

VOTE OF THANKS TO SCRUTINEERS.

The PRESIDENT: I think we owe a debt of thanks to the Scrutineers for the trouble and pains they have taken in giving their services in this very tiresome and more or less irksome work. We certainly appreciate their services. Many of them serve year after year, and we sincerely thank them for doing so. I propose that vote of thanks from the chair.

The motion was carried unanimously.

THE ANNUAL REPORT AND ACCOUNTS.

The PRESIDENT: The Annual Report, with the Treasurer's Statement of Accounts and Balance Sheet, now open for discussion. It is usual to take the Report page by page, and discuss fully any of the matters as we go through it.

The Report was considered page by page.

Mr. W. J. MULVEY: Since the accounts were printed the sum that has been subscribed to the College funds has grown to £450 11s. 6d. (Hear, hear).

The PRESIDENT: On the 30th April you will notice that the item stood at £216. The rest has been received since that date. If there is no discussion on the report perhaps someone will propose the adoption of the report and balance sheet.

Mr. F. L. GOOCH: I have great pleasure in proposing the reception and adoption of the report.

Mr. HUGH A. MACCORMACK: I have pleasure in seconding the motion.

THE REBATE ON PETROL.

The PRESIDENT: I should like to say with regard to the tax on petrol that there seems to be some haziness or misconception in the minds of some members. What they should do is to apply, as soon as possible, for a rebate for the previous six months from the 23rd December last. They will not get a rebate for more than six months back. All they have to do is to collect their receipts for petrol and hand them in to the nearest Excise officer, and they will get the rebate in due course.

Mr. GOOCH: I do not know, Sir, whether I am right or you are right, but I could not get a rebate further back than six months from the date at which I made my application, not from 23rd December.

The PRESIDENT: That is so, but they will be entitled to it for six months back if the application has been in from the 23rd December.

Mr. GOOCH: It will be also necessary to obtain from the agent from whom the spirit is bought a ticket to say that he has paid the full tax. The ticket should be obtained when taking the petrol.

The PRESIDENT: If any member of the profession finds any difficulty whatever in procuring his supply of petrol he should immediately forward particulars to Mr. Bullock and we will see that the matter is put right.

Mr. WM. WOODS: I should be glad if that statement could be published in one of the papers—that we are entitled to a rebate on petrol for six months, because the reply to my request was that I was only entitled to it after the passing of the Finance Act, and not before.

The PRESIDENT: I think you may take it that the statement I have made is correct in so far as we have it from the Treasury.

The motion for the adoption of the report was carried unanimously.

GREETINGS FROM RUSSIA.

Sir STEWART STOCKMAN: Yesterday I received a letter from Russia. It is addressed to me, but quite clearly is intended for the veterinary profession of this country. It is dated April 10th, and is as follows:—

"Dear Sir,—The Society of Veterinary Surgeons of Kharkow send their hearty greetings to their English colleagues in memory of Easter and present events, hoping that now, when each day brings to light fresh plots of our common enemy, not only in Russia, but, as is proved by the trouble in Dublin, in England also, our ties shall be strengthened and that we shall stand by each other in our struggle against our foe, trusting in and working together for a bright future."

That is signed by the President of the Society of Veterinary Surgeons, Prof. D. S. Dedulin. I should like to move that this annual meeting of members of the Royal College of Veterinary Surgeons of Great Britain and Ireland appreciate and reciprocate the feeling expressed in this letter from the Society Veterinary Surgeons of Kharkow, and I should like to add that our President should be asked to frame and send off a suitable reply.

Mr. W. SHIPLEY: I should very much like to second that.

The motion was carried unanimously.

Mr. W. J. MULVEY: We must not allow this meeting to terminate without proposing a vote of thanks to our President. Those of us who have worked with him during the past two years know how much arduous work he has put into the business of the College. He has missed no point. He has been interested in the Army Emergency and also in endeavouring to obtain men for the army, and also, as you have just heard, in getting a rebate on the petrol tax. If that was all the

work he had done he deserves our thanks, but he has thrown himself strenuously into everything that concerns the good of the profession.

Sir JOHN M'FADYEAN: I have much pleasure in seconding that, and I should like to endorse everything Mr. Mulvey has said. I think I may say with confidence that no President of this College has ever had in fuller measure the respect and confidence of the Council than Mr. Garnett; and I venture to say that the feelings, in that respect, of the Council are representative of those of the entire profession. (Cheers).

The motion was carried with acclamation.

The PRESIDENT: I thank you sincerely for your appreciation of anything I may have done during the past year—but I would also remind you that nothing attaches to any individual. What has been said please do not apply to me. It is the work of the Council in these strenuous times, and I am happy if I have added anything myself.

The meeting then terminated.

DONATIONS TO R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following subscriptions for 1916 to the College funds:—

N. Almond, Kingston-on-Thames	£1	1	0
A. Baird, Major A.V.C., Edinburgh	1	1	0
H. Barnard, Capt. A.V.C.	1	1	0
J. Bell, Capt. A.V.C.	1	1	0
J. H. Bennett, Romford	1	1	0
J. W. Bennett, Capt. A.V.C.	1	1	0
R. Bennett, Lieut. A.V.C.	1	1	0
N. Brear, Lieut. A.V.C.	1	1	0
R. Burt, Brighton	1	1	0
W. Burt, Capt. A.V.C.	1	1	0
A. F. Castle, Capt. A.V.C.	1	1	0
H. W. Caton, London	1	1	0
R. J. Collings, Capt. A.V.C.	1	1	0
W. Dale, Coventry	1	1	0
C. Davenport, Capt. A.V.C.	1	1	0
W. R. Davis, London	1	1	0
J. C. Deville, Uttoxeter	1	1	0
J. Dixon, Blaydon-on-Tyne	1	1	0
J. Dunstan, Liskeard	1	1	0
E. Evans, Lieut. A.V.C.	1	1	0
W. Fowle, Birkenhead	1	1	0
T. C. Garry, London	1	1	0
F. C. Gillard, Folkestone	1	1	0
H. C. D. Gollidge, London	1	1	0
B. Gorton, Ilford	1	1	0
J. K. Grainger, Lt.-Col. A.V.C.	1	1	0
P. Gregory, Tonbridge	1	1	0
W. Halstead, Capt. A.V.C.	1	1	0
J. Hammond, Jun., Bale, Norfolk	1	1	0
A. Hart, Lieut. A.V.C.	1	1	0
J. Hatch, London	1	1	0
W. C. Hazelton, Buckingham	1	1	0
F. E. Heath, Capt. A.V.C.	1	1	0
L. W. Heelis, Capt. A.V.C.	1	1	0
S. Hirst, Lieut. A.V.C.	1	1	0
R. H. Holmes, Lt.-Col. A.V.C.	1	1	0
F. F. Horton, Lieut. A.V.C.	1	1	0
R. Hudson, Retford	1	1	0
W. Hughes, Caerwys	1	1	0
W. James, Cribyn, Llanybyther	10	0	0
T. E. Jones, Liverpool	1	1	0
H. E. Keylock, Swindon	1	1	0
W. Kirk, London	1	1	0
T. D. Lambert, Dublin	1	1	0
R. N. Lewis, Capt. A.V.C.	1	1	0
W. M. Lyon, Wooler	1	1	0
J. Maguire, Liverpool	1	1	0

E. S. Martin, Capt. A.V.C.	£1	1	0
A. W. Mason, Lt.-Col. A.V.C.	1	1	0
J. A. Meredith, Lt.-Col. A.V.C., 1916-17	2	2	0
J. J. Meyrick, Budleigh Salterton	1	1	0
H. Morphew, Loxwood, Sussex	1	1	0
W. Noar, Bury	1	1	0
G. D. Norman, Capt. A.V.C.	1	1	0
A. F. O'Dea, Tuam	1	1	0
R. H. H. Over, Capt. A.V.C.	1	1	0
C. Pack, Lymington	1	1	0
J. Peddie, Major A.V.C.	1	1	0
W. Penhale, Holsworthy	1	1	0
F. Pickering, Hexham	1	1	0
J. S. Pike, Swansea	1	1	0
R. K. Porteous, Lieut. A.V.C.	1	1	0
J. W. Proctor, Romford	1	1	0
D. Pugh, Sevenoaks	1	1	0
R. W. Raymond, Lt.-Col. A.V.C.	1	1	0
H. C. Reeks, Spalding	1	1	0
W. D. Rees, Trealan, Glam.	1	1	0
J. Riddoch, Edinburgh	1	1	0
W. Roach, Exeter	1	1	0
A. Robb, Capt. A.V.C.	1	1	0
C. Roberts, Tunbridge Wells	1	1	0
M. Robinson, Barnsley	1	1	0
R. Scott, Capt. A.V.C.	1	1	0
W. F. Shaw, London	1	1	0
C. F. Shawcross, Lieut. A.V.C.	1	1	0
T. E. Smith, Market Rasen	1	1	0
S. H. Skelton, Capt. A.V.C.	1	1	0
W. K. Stuart, Major, Hove	1	1	0
A. N. M. Swanston, Major A.V.C.	1	1	0
F. Thompson, Morecambe	1	0	6
J. H. Thomson, Capt. A.V.C.	1	1	0
H. A. Thorne, Capt. A.V.C.	1	1	0
A. H. Towne, London	1	1	0
J. F. D. Tutt, Lieut. A.V.C.	1	1	0
G. F. Vincent, Sutton	1	1	0
J. E. Wallis, Hailsham	1	1	0
R. Ward, Manchester	1	1	0
A. Weighton, Hull	1	1	0
J. B. White, Hatfield Broad Oak	1	1	0
H. H. Whitlamsmith, London	1	1	0
S. A. Winkup, Montgomery	1	1	0
E. E. Wood, Eccles, nr. Manchester	1	1	0
J. S. Wood, Parkstone	1	1	0
J. Woodger, London	1	1	0
S. M. Woodward, Birmingham	1	1	0
W. R. Wright, Sidmouth	1	1	0
T. D. Young, Capt. A.V.C.	1	1	0
Previously acknowledged	337	15	0
	£440	1	6

THE A.V.C. COMFORTS FUND.

A meeting of subscribers was held at the Royal College of Veterinary Surgeons, 10 Red Lion Square, on the afternoon of Wednesday, June 7th, the President of the College, Mr. F. W. Garnett, occupying the chair.

The CHAIRMAN: Another year finds me in the same position I occupied last year, and I am very pleased to say that the past year has been a most successful one with regard to the A.V.C. Comforts Fund. In fact, I think Mrs. Moore and her Committee of ladies are to be heartily congratulated upon the results, especially as she has a balance of some £200 in hand. I think I am correct in saying that that balance might very easily have been spent, and yet not all the needs of the Fund met. There is no doubt that there is a great shortage of comforts, that is, comforts to supplement anything which is granted to the men through the ordinary Army routine. It is really to supplement that shortage that

the Fund is necessary, and I feel sure that our efforts will have to be continued for at least another twelve months. We have certainly another winter to face, and the best thing is to face it knowing what we have to do. I believe Mrs. Moore will ask for more money, if possible, than we received last year, and I am sure that we all must congratulate her on the success which her efforts have attained during the past twelve months. The Statement of Accounts is extremely interesting reading, and I think it will satisfy the subscribers to know that the money they have subscribed has been well spent. In addition to the £766 9s. 11d. that has been received in actual cash, some thousands of articles have been subscribed on which no actual cash value can be placed. The great lack at the present time are socks, vests and pants, and of course, as the winter comes on, there will be the usual request for helmets and mufflers and such like.

STATEMENT OF ACCOUNT.

Receipts.

Subscriptions—

1st Oct., 1914, to 1st June, 1915	£751 11 0
2nd June, 1915, to 1st June, 1916	766 9 11
	£1518 0 11

Expenditure—June 1915 to June 1916.

CLOTHING—

Vests, Pants, Mufflers, Gloves, Caps,
Shirts, Socks, Waistcoats, Cardigans,
etc.

TOBACCO, Pipes, Pouches, Cigarettes, Pipe
Lighters

STATIONERY—

Writing Materials, Blocks and Wallets,
Pencils

BOOKS

CAKES at Christmas to 120 A.V.C. Wives
52 Officers Mobile Veterinary Section

HOSPITAL (Red Cross)—

Blankets, Suits, Shoes, Dressing
Gowns, Shirts, Pyjamas, etc.

Towels, Soap, Razors, Strops,
Brushes (for Egypt)

WOOL as supplied to Workers £585 12 10

FRUIT, etc., as supplied 19 Veterinary
Hospitals for Christmas Dinners 127 12 7

WEEKLY SUPPLY OF PAPERS

to 19 Veterinary Hospitals in France
" 52 Mobile Vety. Sections " "
" A.V.C. Units in Egypt, Meso-
potamia, Salonika and Levant
Bases for six months 64 0 0

FOUR CLOCKS as supplied Veterinary
Hospitals in France 151 6 9

Freight, Postage, Packing Cases and
Materials, Printing, Stationery, Bank
Charges, Cheque Books, etc. Teas
to Wounded Soldiers at Matinee 10 0 0

£963 12 2
Expenditure first year 344 17 3
Balance to credit in Bank
1st June, 1916 209 11 6

£1518 0 11

Articles as supplied *October, 1914, to April, 1915*,
stated in my report of the Work of the Comforts Fund
as laid before the subscribers at meeting, Royal College

of Veterinary Surgeons, June 2nd, 1915, sent to Army
Veterinary Corps men on active service in France and
Flanders:—

450 shirts	1550 pairs socks
1500 mufflers	380 vests
380 pants	600 caps and helmets
500 belts	1620 prs. mits. & gloves
100 cardigans & waistcoats	360 jerseys
300 blankets	500 inside soles for boots

And as received in *grants* from Indian Soldiers' Fund
for the Indian personnel of Veterinary Hospitals at-
tached Indian Force:—

100 prs. socks	1000 mufflers
500 vests	500 prs. gloves
500 prs. mittens	400 sweaters
500 prs. drawers	500 overcoats
200 helmets	200 blankets
500 shirts	

Articles as supplied to A.V.C. men on active service
in France, Egypt, etc., during six months, *October, 1915,*
to April, 1916:—

2603 prs. socks	1000 vests
1900 prs. gloves & mits	600 pants
1800 mufflers	700 handkerchiefs
600 caps & helmets	250 shirts

Also sweaters, jerseys, cardigans, waistcoats, belts,
towels, shoes, hospital suits, blankets, dressing-gowns,
bed jackets, socks, pyjamas, sun-shields, pipes.

The Fund is also sending out weekly parcels of news-
papers, illustrated papers, magazines, etc., to each large
veterinary hospital (19) in France, also smaller parcels
go to each Mobile Veterinary Section (52), also parcels
to A.V.C. units in Egypt, Salonika, Mesopotamia and
Levant Bases.

Mrs. MOORE: I am glad to have another opportunity
of giving an account of the stewardship you placed in
my hands. It is a very responsible position, and I feel
very often that I am quite unworthy, and that my cap-
abilities are rather inadequate for coping with the
cash, receiving the parcels, acknowledging them, wrest-
ling with them, tying them up, and getting helpers
finally to put them into canvas and despatch them. It
is very willingly done, and I am sure my co-workers are
as keen as I am to go on to the end, and face the next
winter—if we have the money, which is the great thing.
As Mr. Garnett has said, it has been rather difficult to
keep the money, when you get such wholesale orders as
one or two officers in command of individual hospitals
have sent forward. One officer asked for a thousand
vests and a thousand pants, and if we had supplied
them, as of course we should like to have done, it would
have run us into nearly £200. Our refusal in that case
was due to the fact that my husband was trying in every
way possible to extract vests and pants on a more gen-
erous scale from the Ordnance people and the Medical
people. He tried very hard to get it established on
paper that one vest was not sufficient for one man.
When a vest is in rags it can be handed in and the
man then gets another, and when a man has to wash
his vest, he has often to do without it for the time
being. That want would take thousands of pounds to
meet, as the Corps in France now numbers, I believe,
over 10,000 men, and there are a good many also in
Egypt. We will do our best in socks, mufflers, caps,
mittens, and gloves.

The weekly supplies of papers that go from Smith's
to the hospitals and the mobile sections are, I think,
especially appreciated by the mobile sections, because
the men are very often in out-of-the-way places, where
papers cannot be got. Before I started sending out
weekly bundles papers were a great prize and were
very greatly valued. My husband thought it would be

a good thing make a list of the likely papers read by the men and the officers, and see that they got a supply regularly week by week. I rather hesitated at first at the cost—it costs us £75 for three months: but remembering the amount of enjoyment it gives, I think we ought to continue it as long as we have the money. Before we started dealing with Smith's a great many ladies and others voluntarily sent officers special parcels of papers, and a great many are still doing that, and they deserve every thanks for what they have done; it means a good deal of money and work, and a large expense in postage. As Dr. Bradley is not here I should like to send him a message of thanks, because he is sending a great quantity from the students in Edinburgh; also Mrs. Mettam, who is sending from the students in Dublin. They have been very good in sending tobacco.

It was the desire of the officers to add a little attraction to the menu for the Christmas dinner, and my husband suggested we should help in that way. Officers told us that fruit was much appreciated, especially oranges and apples, which were looked upon as great luxuries in France. That cost us £64. The officers spent what they thought was right, and I refunded them the money. I was also asked to give clocks to the new hospitals, not as a luxury, but in order that time might be properly kept and things work smoothly, and I hear they are giving every satisfaction.

At the Matinée which we organised in the autumn, I invited every man belonging to the Corps who was in hospital or on the sick list round London. We got the list from Col. Brown, at Woolwich, and conveyed as many as possible to London, and I believe they had a jolly afternoon. We could not send them away without refreshment; we gave them tea, and wounded soldiers from other hospitals also had tea, and I hope you will think that that was justified.

It seems rather invidious to make special mention of people's kindness, but several have sent me in very nice cheques. Miss Harper and Mr. Morgan, who live near Dover, sent me a cheque, the proceeds of a fancy fair at Christmas-time. Mrs. Baird, of Edinburgh, got up a concert and sale. Mrs. Harvey, who lives in Cornwall, had a garden fête, and sent me a cheque. Mr. King has been very good indeed in collecting in the City of London, and getting up not only subscriptions, but interest in the Fund amongst those who are working with horses. He and Miss Queripel lumped the money they individually collected, and gave me one cheque. Mr. King, I think, will try to help us again next winter in the same quarters.

From Ireland, Mrs. Mettam continues to send splendid contributions; and the help of Mr. Ewing Johnston, of Belfast, Mr. E. C. Winter, now in Virginia, U.S.A., and Mr. D. Kehoe, in Pretoria, is most acceptable. Then there is Major Cochrane, who was at one time the officer in charge of the Base Stores at Havre. He had a good deal of work to do there in handling our stores, and he felt we were doing a good work which ought to be encouraged. I had a letter from him the other day, in which he said he felt that as so many men had gone away from the reserve section at Bulford Camp, and they had more funds than they could spend on themselves there at present, and asked me to agree to accepting a grant, and he sent me a sum of £30 for the Fund. My suggestion for spending it was that the people from whom the money came should be told that it was going really to provide attractions in recreation rooms in the way of newspapers, games, and stationery. Colonel Stratton, who is the D.V.S. of the Scotch Division, has begged and pressed wherever he has gone, and has obtained a nice sum. Major Arnold Porritt, of the West Highland Division, at Preston, also wrote a very kind letter, sending me money subscribed by the N.C.O.s. and

men, and hopes to be able to send something each month. Many Territorial people have not been at the front, and I rather discouraged some ladies working for comforts for those at home; I had to tell them that we could not possibly run to it, that it was as much as we could do to send comforts to the men overseas. Captain Edgar, of the Curragh, made a collection and sent it to me, and a collection has also been made in the United States among the officers serving on the Veterinary Commission. Mr. Shipley received the money and gave me half; the other half going to the Victoria Benevolent Fund. I think we ought to send a very hearty vote of thanks to the officers who initiated that collection and carried it through successfully. One cheque was for £33 2s. 6d., and the other 12 guineas. All this is of the greatest encouragement to me, as it shows me that these officers think we are doing work worth doing.

We have to look forward to next winter. Even if peace comes, the men will be kept overseas for some time, and we shall have to go on with our supplies. I implore people to knit as much as they can now. Wool is going up in price, and people's time is becoming more occupied, and later on it might be more difficult. We must have a big store before we can start sending out. I have only £200 now in the bank. In July I shall have Smith's bill for £75, and that will not leave very much to begin to buy in September and October. Therefore I ask for both stock and cash.

I said last year that we had great hopes of doing more for the wives and families, of whom there are over a hundred round London. Some ladies were exceedingly kind in helping me. Mrs. Willett visited children in hospitals, and Mrs. Rutherford visited, and Mrs. Mosley visited the wives in her husband's section, and met with a good deal of proof that these women and children do want looking after. All this requires personal service, and if some of our officers' wives in different circumstances would help in the work, I can always give them the names of women who are in their districts who might be visited. Mrs. Mosley suggested to me the other day that we should have a little gathering of the women round London, and give them tea and entertainment. I do not think that should come out of the Comforts Fund, but perhaps we can make up a little private subscription. The gallery at the Matinée was pretty well filled with wounded soldiers and women, and the women were very pleased to take part in something "belonging to the Corps," as they said. Mrs. Garnett has a working party busily engaged round Windermere, and Mrs. Shipley has the same round Yarmouth, and Mrs. Barber and Mrs. Ashford and Miss Hickman have been working splendidly. If we could start more people like that in different centres as local working parties, it would be a very great advantage. Several political organisations have given me large grants of stuff, as for instance the St. Rollox branch of the Women's Conservative Association. Lady Maud Cavendish has also sent me big bundles for the Fund.

I should like again to thank everybody who has worked for me. We hope next winter to have a purchasing and packing department organised on regular days, so that workers may be able to give a whole day, and not only an hour or so. I have to thank Mr. Garnett for allowing us to have this meeting here, and for presiding. It is a very great encouragement to be so recognised by the heads of the veterinary profession and to be encouraged to the extent we are encouraged by their support.

Major-Gen. THOMSON, C.B.: I should like to second Mrs. Moore's proposition for a vote of thanks to Mr. Garnett for the trouble he has taken to be here to-day and for the trouble he has always taken with regard to the Committee. I know from experience the immense amount of work Mr. Garnett has done in the profession

as President of the College. His time is completely taken up with very many arduous and touchy matters which have to be dealt with, and that he should give his time to preside here this afternoon is a matter for which we should be exceedingly grateful. There is no doubt that there are very many necessities which must inevitably be outside the ordinary routine of the official supply. Amongst them vests are the things men require more than anything else. Pants as well, but vests especially, and good ones. I heard of a Colonel of a unit who was particular as to the cleanliness of his men, and gave an order that on a particular day all men's underclothing should be changed. There was one company that only had one vest per man, and the platoon sergeants were at their wits end to know how the order was to be obeyed. But they got over the difficulty by telling the men: "You cannot change your vests on yourselves, so you will change with one another." That is the kind of thing we wish to avoid.

Mrs. MOORE: I may say that I have been sending a lot of cool vests and pants to Egypt lately, where, in the hot weather, it is very necessary to have a change.

The motion was carried unanimously.

Col. RAYMOND: On behalf of the Army Veterinary Corps, I wish to express their great thanks to the ladies who have worked so industriously and so very well in sending out these comforts through Mrs. Moore. I have had no opportunity of seeing the men in France myself, but I have had a good many opportunities of conversing with men home from the Front, and they all express their thanks for the great benefit and comfort they derive from these presents.

Mr. J. WILLETT: I should like to add a word of appreciation on the part of the profession for the great work the Fund is doing. Looking round at the small meeting to-day, I feel that the civilian members might have taken a greater part this afternoon and supported Mrs. Moore a little more.

Mrs. JACK WILLETT: May I suggest that it might be possible to get up a concert?

Mrs. MOORE: I agree that that might be done in the winter.

Mr. J. WILLETT: I think we could do it better if we had a concert wholly on behalf of the Fund, say in the small Queen's Hall.

Mrs. MOORE: I have not advertised the Fund, and I have been asked why. People do not seem to realise the cost of advertisements in such papers as *The Morning Post* or *The Times*, and I do not think the result is commensurate with the expenditure.

Major-Gen. THOMSON: The R.S.P.C.A., in connection with their fund for wounded officers, have expended £50 a week in advertisements.

Mr. J. WILLETT: But if you get £200 or £300 for the £50 expenditure, it is all to the good.

Major-Gen. THOMSON: Any advertisement put in *The Morning Post*, or such papers, would have to be a display advertisement, to have any effect at all, and so would cost about £30, and I agree with Mrs. Moore that the result would not be commensurate with the expenditure.

Mr. J. WILLETT: I think there are a good many outside people who would be touched by an advertisement such as that.

The CHAIRMAN: Many localities have a fund of their own, and I find they are quite willing to give something towards a fund if an appeal is made to them, and it should be remembered that in nearly every locality there are a certain number of men in the Army Veterinary Corps. School children have done splendidly in making articles, especially socks, and in several cases the children, who have attached their names to the socks,

have had personal acknowledgements from the men to whom they were sent.

Mrs. MOORE: Mrs. Mackenzie has been doing a good deal among the mill girls in Scotland. We have supplied the wool, and I think they have sent us 500 pairs of socks. I do hope that some word from this meeting will go forth and reach the ladies of the officers of the Corps, and get them to stir up interest in their own circles.

The CHAIRMAN: The persons I think especially deserving thanks are Mrs. Moore and the Committee of ladies who have so kindly undertaken this Fund. I may mention that I have had an apology for not being present from Mr. Price, who sends £5, and Mrs. Moore has had the same from Mr. Slocock. It shows that the interest in the Fund is maintained. We must make our appeal as wide as possible in the coming autumn. I beg to move a vote of thanks to Mrs. Moore and the Committee.

Col. RAYMOND seconded the motion, which was carried unanimously.

The meeting then closed.

Diphtheria from Cats.

A communication to the *National Medical Journal* describes how an outbreak of diphtheria in an orphanage was traced back to cats. Sixty-nine cases of diphtheria out of a total of 71 came from the boys' house. After many investigations and precautions such factors in the production of the disease as sanitary defects, contaminated water supply, and food were eliminated.

Realising that there must be a carrier of the bacillus, the physician in charge decided to turn his attention to the cats and took swabs from all their throats. On bacteriological examination it was found that the four cats from the boys' side of the orphanage were suffering from diphtheria; the four cats from the girls' side, although showing other micro-organisms in profusion, did not prove to have the true diphtheria bacillus. The cats were destroyed, and after that, within a few days, 10 more cases of diphtheria occurred. There have been no cases since.

ARMY VETERINARY SERVICE

BIRTHDAY HONOURS.

ORDER OF THE BATH.

The King has been pleased to give orders for the following promotions and appointments in the Most Honourable Order of the Bath:—

C.B.

* * * *

Colonel CHARLES EDWIN NUTHALL, M.R.C.V.S.
Deputy Director-General, Army Veterinary Service.

IMPERIAL SERVICE ORDER.

The King has been pleased to make the following appointments:—To be Companions of the Imperial Service Order:—

* * * *

EDMUND BURKE, Esq., D.V.M., F.L.S., F.Z.S.

Civil Veterinary Department, Professor of Surgery,
Punjab Veterinary College, Lahore, Punjab.

ORDER OF ST. MICHAEL AND ST. GEORGE.

The King has been graciously pleased to give directions for the following appointments to the Most Distinguished Order of Saint Michael and St. George, for services rendered in connection with Military Operations in the Field:—

C.M.G.—ADDITIONAL MEMBERS.

* * * *

Lieut.-Colonel A. C. NEWSOM, A.V.C.

Lieut.-Col. WALTER J. TATAM, A.V.C.

Lieut.-Col. ERNEST E. MARTIN, F.R.C.V.S., A.V.C.

PROMOTIONS FOR SERVICE IN THE FIELD.

The King has been pleased to approve of the under-mentioned rewards for Distinguished Service in the Field, dated June 3rd, 1916:—

To be granted the next higher rate of pay under Article 241 of the Royal Warrant:—

* * * *

Temp. Qrmr. and Hon. Lieut. J. FISHER, A.V.C.

D.S.O.

Maj. (temp. Lt.-Col.) JOHN J. AITKEN, A.V.C.

Maj. GERALD CONDER, A.V.C.

Maj. JOHN J. GRIFFITH, F.R.C.V.S., A.V.C.

Capt. (temp. Maj.) JOHN R. HODGKINS, F.R.C.V.S., A.V.C.

MILITARY CROSS.

* * * *

Capt. F. B. GRESHAM, M.R.C.V.S., A.V.C. (T.F.)

Capt. W. J. E. MCKENZIE, M.R.C.V.S., A.V.C. (S.R.)

Capt. E. SEWELL, M.R.C.V.S., A.V.C. (S.R.)

DISTINGUISHED CONDUCT MEDAL.

* * * *

Temp. Sgt.-Major S. HARMAN, 57, A.V.C.

MILITARY MEDAL.

* * * *

Sgt. (Actg Staff-Sgt.) W. BEER, 168, A.V.C.

Lce-Cpl. (Actg. Staff-Sgt.) A. S. HENDERSON, 524, A.V.C.

Farr. Staff-Sgt. S. MILLS, 3432, Indian A.V.C.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, June 3.

REGULAR FORCES. ARMY VETERINARY CORPS.

June 1.

To be temp. Lieut.:—A. Temple (May 17; A. H. Hall (May 18).

To be temp. Qr.-Mr. with hon. rank of Lieut.:—F. Benwell (June 1).

June 2.

To be temp. Lieut.:—C. E. Rix (May 17).

June 3.

Temp. Lieuts. to be temp. Capts.:—T. B. Harries, R. T. James, C. O. Maconachie (May 23).

June 6.

To be temp. Lients.:—W. G. Bunnell, W. Walker (May 24).

June 7.

Temp. Lieut. W. L. Richardson relinquishes his commission on termination of his engagement.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

June 1.

Capt. W. H. Brown relinquishes his commission on account of ill-health (June 2).

The following officers have been reported from the Base as believed to have been taken prisoners at Kut-el-Amara:—

Lieut. E. S. Farbrother, I.A. Res. of Officers attached A.V.C.; Capt. H. Stephenson.

The following casualty is reported:—

DIED—Pte. C. H. Barrett, 698, S. African V.C.

Personal.

Mr. PETER SALMON DOLLAR, of Great Cumberland Place, W., left estate valued at £56,433.

OBITUARY.

T. VALENTINE PETTIFER, F.R.C.V.S., J.P., Tetbury, Glos.

Graduated, Lond: March, 1887

Fellow: April, 1893

Mr. Pettifer's death occurred on June 2nd, aged 50.

CADE.—Killed in action, on 29th May, Charles Albert Cade, Queen Victoria Rifles, fourth son of the late Thomas Cade, M.R.C.V.S., and Mrs. Cade, Brandon Villas, Bristol.

CORRESPONDENCE.

THE TAX ON MOTOR LICENSES.

(The following letters from Members of Parliament have been forwarded to us for publication.)

Wooton, Polegate, Sussex,
2nd June, 1916.

Dear Mr. Wallis,

Your letter is to hand, and I will see if I can do anything in regard to the matter about which you wrote when the House meets again. I think the request is a reasonable one.—Yours truly,

RUPERT GWYNNE.

J. E. Wallis, Esq., Hailsham.

Peplow, Market Drayton,
26th May, 1916.

Dear Mr. Trigger,

Many thanks for your letter *re* V.S. If I am in the House I will support the amendment, but my military duties take up so much of my time now.

Yours sincerely,

R. C. Trigger, Esq.,
Newcastle, Staffs. BENIELLE STANIER.

2, Belgrave Square, S.W.
1st June, 1916.

Dear Sir,—I have your letter, and will do what I can to get favourable Treasury consideration for a rebate of license duty on Motor Cars used by Veterinary Surgeons, but, being myself a member of the Government, I cannot take part in any debates on the question. The case you put is a very strong one, and I am passing your letter on to the Chancellor of the Exchequer.—Yours faithfully,

Major W. S. Mulvey.

E. G. PRETTYMAN.

Original articles and reports should be written on one side of the paper only and authenticated by the names and addresses of writers, not necessarily for publication.

Communications for the Editors to be addressed
20 Fulham Road, London, S.W.

MILK FEVER (?) IN A EWE.

Sir,—At your invitation, may I offer my opinion upon the case described by Messrs. J. E. and E. Whatley in your last issue of *The Veterinary Record* (April 29, p. 498).

Reasoning from the symptoms stated, I have no hesitation in coming to the conclusion that the ewe was suffering from Louping ill—not Milk fever: its quick response to udder inflation, which treatment is both interesting and instructive, notwithstanding.—Yours truly,
Llyn, Lilangollen. J. JOCELYN LODWICK.

[The foregoing note refers to the communication by Mr. Frank Cundell, of Swindon, and should have appeared at the time. By an unfortunate accident it was misplaced and temporarily lost sight of.]

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donations are reported:—

E. F. Angler, Capt. A.V.C.	£1	1	0
J. Dunstan, Liskeard	1	1	0
J. Hatch, London	1	1	0
W. K. Johnstone, Capt. A.V.C.	1	1	0
J. J. Meyrick, Budleigh Salterton	1	1	0
H. Morphew, Loxwood, Sussex	1	1	0
E. C. Webb, Major A.V.C.	2	2	0
Previously reported	182	7	3
Total	£190	15	3

The A.V.C. Comforts Fund.

Dear Sir,—I herewith enclose my sixteenth list of contributions to the A.V.C. Comforts Fund. I wish specially to thank Mr. Ewing Johnston, of Belfast, and Mr. Winter, of Limerick, for their efforts on behalf of this Fund, also to Mr. D. Kehoe, of Pretoria, South Africa, who collected subscriptions in S. Africa, and which are included in this list.

Would you kindly insert this list in the next number of *The Veterinary Record*?—Yours faithfully,

Principal's House, MARGT. METTAM.
R.V.C., Dublin, 6th June.

Prof. G. T. Dunne (F), R.V.C.I.	2nd don.	1	1	0
" T. G. Browne "	"	1	1	0
" J. F. Craig, M.A. "	"	1	1	0
" J. J. O'Connor "	"	10	6	
W. H. Wilkinson, Dublin	"	1	0	0
T. D. Taylor, Emyvale	"	10	0	
J. T. Clanchy, Charleville	"	10	0	
A. Dobbryn, Waterford	"	10	0	
E. Wallis Hoare (F) Cork	"	10	0	
J. Preston, Mallow, Cork	"	1	1	0
Mrs. Chris Rea, Clonmel	"	1	1	0
D. T. Mitchell, Pretoria, South Africa	"	3	0	0
D. Kehoe, " "	"	3	0	0

A.V.C. (Overseas) Comforts Fund, collected by D. Kehoe, Pretoria:—

Sir A. Thielor, K.C.M.G. Pretoria	£2	2	0
C. E. Gray, P.V.S.	2	0	0
J. Walker	2	0	0
H. H. Green	2	0	0
D. T. Mitchell	2	0	0
E. M. Robinson	2	0	0
W. H. Andrews, B.S.C.	2	0	0
F. Veglia	2	0	0
P. R. Viljoen	2	0	0
S. H. Ewing	2	0	0
D. Kehoe	2	0	0
G. A. H. Bedford	1	0	0
T. Meyer	10	0	23 12 0
Total	£411	2	6

Dunmurry Work Guild (per J. Ewing Johnston) Belfast: 100 prs. socks (10 housewives included), 30 forage caps, 20 prs. mittens, 1 helmet, 1 sleeveless jersey. J. Ewing Johnston, Belfast, (5th, 6th and 7th contributions): 68 prs. socks, 11 prs. mittens, 6 forage caps, 8 mufflers.

Action between Veterinary Surgeons.

In the Sheriff Court, Duns, the record has been closed in an action at the instance of Alexander Lawson, veterinary surgeon, Galagate House, Norham, against William Lothian, veterinary surgeon, Duns. The action is for payment of £42 for services rendered by pursuer in looking after defender's practice in Duns during his absence owing to illness. Pursuer avers that he offered to look after defender's practice for one week gratuitously, but as he was actually engaged for seven weeks without any arrangement as to payment, defender is liable to a *quantum meruit* according to the nature of the work actually done. Defender avers that pursuer's services having been voluntarily offered and accepted as gratuitous, the pursuer is not now entitled to remuneration therefor. He states that while believing that there was no legal obligation on him to make any payment he was prepared to make a reasonable honorarium to defender for his services. After the action was raised pursuer offered to pay an honorarium of £21, but this offer was not accepted. The record was closed and the case was put on the roll for discussion on a preliminary plea by defender.—*The North British Agriculturist*.

Assumption of Medical Titles.

In Scotland an important legal precedent has been established by a decision, on appeal, of the Court of Session. A limited company carries on in Edinburgh an objectionable form of unqualified practice under the style of the "Dr. Temple Company." The Royal College of Physicians, with Dr. Norman Walker, its treasurer, has succeeded in obtaining a perpetual interdict against the company, restraining it from using the word "Dr.," and so pretending to the public that it possesses some medical title to practise. Company law and administration in England have hitherto failed to check similar abuses. The civic spirit and the success of the Royal College may well encourage other corporations to re-examine their powers in respect of the medical interests of the public.

In another Scottish court a pretender to medical qualification, who attempted to obtain money by falsely assuming a medical title, has been sentenced to three months' imprisonment, apparently without the option of the fine for mere false assumption provided in Section 40 of the Medical Act, 1858.

Joint-III.

To the Editor of *The Scottish Farmer*.

Sir,—I have been greatly interested in the recent correspondence in your columns regarding this serious affection, and am somewhat disappointed that more details as to the precise nature of the anti-toxin recommended by Mr. Harold Swithenback, and employed with such success by Messrs. Phillip and Pottie, are not forthcoming. It is to be hoped that this war will not be responsible for such a boon as this promises to be being indefinitely withheld from the anxious stock-breeders of the country. The theory that this disease

is transmitted from mother to offspring during intra-uterine life is extremely difficult to reconcile with physiological and bacteriological knowledge of gestation, and if widely accepted may be productive of a careless attitude on the part of breeders towards cleanliness and disinfection of the unhealed navel, which may react very unfavourably.

As one who has been intimately connected with breeding of both harness and Clydesdale horses for a considerable period, I have been much impressed by the prevalence (under identical conditions) of this dreaded scourge in the heavy breeds, as compared with the lighter ones, where, in fact, it is comparatively rarely seen. Big, slack, fashionably-bred Clydesdale foals, with strong navels and gaping, exposed blood vessels which wither slowly, appear much more prone to contract the malady, and this is only in accordance with the theory that infection occurs from without. The bacteria which are usually found in the diseased navel, and which may subsequently become absorbed into the foal's system, joints, etc., are of a mixed variety, chiefly pyogenic, and have a wide distribution in nature, occurring in the atmosphere and in the floors and bedding of stables. Where there is a considerable mass of moist dead tissue adhering to the foal's abdomen, it is not difficult to understand how the part becomes infected. Careful daily inspection of the unhealed navel is essential, and it is often necessary to cast the foal on its side for this purpose. If signs of heat, tenderness, or moisture exist, then treatment (surgical or otherwise) of the part may be undertaken in time, and with good hopes of success, before the bacteria have penetrated into the occluded blood vessels in the interior of the

abdomen, and have managed to get beyond the reach of control; by the time the foal exhibits signs of illness and fever, the mischief has often extended too far, and blood poisoning results.

Foaling of mares at grass would probably reduce the liability to the disease, and might be adopted in the lighter breeds during suitable weather, because such foals are quickly on their legs, and their navels are proportionately smaller; but in pedigreed early foaling Clydesdale mares in soft condition and carrying big, unwieldy foals, there would be a considerable element of risk. It is quite possible that injections of anti-toxin into foals after birth may produce a degree of immunity against the malady, although the efficacy of this treatment has not been established; but meantime, let us not under-estimate the danger of infection from the unhealed navel.—Yours, etc.,

JOHN R. M'CALL, Capt., A.V.C.

Glasgow, 22nd May.

The slaughter of Calves.

At a meeting of the Hull Corporation Markets Committee recently, the Town Clerk and the Chief Food Inspector (Mr. Jas. McPhail) called attention to the difficulty of obtaining any good results under the Live Stock Order of 1915, which prohibits the slaughter of calves and cows in calf. It was stated that contraventions of the Order were very frequent, and could not be dealt with effectively so long as it remained in its present form. The Committee resolved that the Town Clerk and Chief Inspector should interview the Local Government Board, point out the growth of the evil, and urge the advisability of amending the Order.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
GR. BRITAIN.											
Week ended June 3	11	21			1	1	36	68		122	295
Corresponding week in											
{ 1915 ...	8	8			1	1	20	35		126	683
{ 1914 ...	9	9			1	1	31	74	1	118	1223
{ 1913 ...	11	11			5	7	31	57		60	830
Total for 23 weeks, 1916 ...	290	345	1	24	22	63	1419	3284	173	2278	7182
Corresponding period in											
{ 1915 ...	334	371			15	20	1352	1786	155	1966	9022
{ 1914 ...	401	427	11	74	43	90	1288	2321	145	1888	19149
{ 1913 ...	293	315			79	226	1533	3139	120	1051	15323

† The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, June 6, 1916

† Counties affected, animals attacked:—York, West Riding
Excluding outbreaks in army horses.

IRELAND. Week ended May 27								Outbreaks			
...	...	...	...	...	...	...	...	...	1	7	32
Corresponding Week in											
{ 1915 ...	...	...	...	...	...	...	...	3	2	...	4
{ 1914 ...	...	...	...	...	...	...	...	2	5	2	8
{ 1913 ...	...	...	...	...	...	...	...	4	4	7	41
Total for 22 weeks, 1916 ...	2	6	...	...	...	...	...	29	213	130	689
Corresponding period in											
{ 1915 ...	1	1	...	...	1	3	...	23	240	121	739
{ 1914 ...	1	1	74	837	...	...	...	45	335	104	517
{ 1913 ...	...	...	...	...	...	...	...	87	288	72	436

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, May 29, 1916

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1458.

JUNE 17, 1916.

VOL. XXVIII.

THE DIFFERENTIATION OF DISEASES.

Last week we published a foreign description of equine infectious paraplegia, a disease which is probably not known to many English veterinarians. It does not seem ever to have been observed in this country; but it is known to exist in some neighbouring ones, and may be found here also. Its history is comparatively recent; and it is certainly possible to confuse it with other diseases, which indeed, has been done. This naturally suggests that its distribution may be wider than is yet realised. There are many examples in veterinary literature of diseases failing to gain independent recognition for long periods, because they were confused with other conditions more or less similar clinically.

Perhaps the most striking of such examples is John's disease. We all now know its prevalence, its wide distribution in many countries, and its great economic importance. Yet its recognition as an independent disease distinct from tuberculosis was only established ten years ago. The recognition of its wide prevalence—showing us how frequently it must previously have been mistaken for tuberculosis or strongylosis, followed close upon its differentiation as a distinct disease. We have made good progress against John's disease since then; but certainly great loss could have been avoided had it been differentiated earlier.

Instances such as this suggest the necessity for a more careful observation of cases seen in daily practice, and a more frequent communication between clinicians and pathologists. We are not here referring so much to the elucidation of a disease which is already recognised as a distinct pathological entity as to the essential preliminary step of first recognising it as such. History shows plainly that that first step is not always easy to take; and veterinary surgeons have often been regrettably slow in taking it. So many diseases have only obtained distinct recognition after long confusion with other conditions, and so many of these recognitions have been in recent years, that we may conclude that a good many similar discoveries are still waiting to be made. Every practitioner knows of some obvious problems in the differentiation of disease, such as the infectious respiratory affections of the horse. These problems can be best solved—and some can only be solved, by the co-operation of clinicians and pathologists.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

[NATIONAL V.M.A.—SOUTHERN BRANCH.]

The quarterly meeting was held at the Grand Hotel, Birmingham, on Tuesday, May 23rd. Mr. J. Malcolm, President, occupied the chair, and there were also present: Mr. W. H. Brooke, Major W. S. Carless, Messrs. J. Cormack, A. B. Forsyth, F. H. Gibbings, J. A. Gold, F. L. Gooch, Capt. L. W. Heelis, Messrs. W. E. Ison, J. Martin, R. Murray, E. O'Neill, H. L. Pemberton, F. V. Steward, S. M. Woodward, H. Yeomans, and H. J. Dawes, Hon. Sec. The visitors present were Messrs. J. W. Conchie, and J. R. Powley.

Apologies for unavoidable absence were read from Messrs. F. Hobday, C. E. Dayus, J. R. Carless, R. L. Phillips, D. Forwell, T. J. Brain, R. Cockburn, F. B. O. Taylor, T. H. Hobson, J. J. Burchnall, W. W. Grasby, J. Bainbridge, J. Martin, jun., Hughes, C. J. Byner, R. C. Trigger, W. Trigger, and others.

REPORT OF THE COUNCIL.

The Hon. Sec. reported that a meeting of the Council was held immediately prior to this gathering, when there were present: Messrs. Malcolm (in the chair), Gooch, Martin, Pemberton, Ison, and Dawes. The only business under consideration was the programme for the next quarterly meeting, and it was stated that on that occasion the President will invite members to pay a visit of inspection to the abattoirs and sewage farm of the City of Birmingham.

On the motion of Mr. Gooch, seconded by the Hon. Sec., this report was adopted.

The minutes of the previous meeting were duly confirmed, and the rules of the Association were taken as read.

THE MOTOR TAX.

The Hon. Sec. referred to the motor tax, about which an attempt was being made to get the same conditions as obtained in the sister profession. He failed to see why there should be any difference of treatment in the veterinary and medical professions. When they came to consider that many veterinary surgeons were doing a great amount of Government work, both in connection with the army and for the Board of Agriculture, they ought not to rest satisfied until they enjoyed the same privileges as the medical profession. He suggested that members do what they could to influence their Members of Parliament to help forward the movement.

Mr. ISON said that as the matter came on that week in the House of Commons there was not much time to lose.

Mr. GIBBINGS said he was talking to an M.P. friend of his the other day about the Veterinary Surgeons Bill, and he had to confess he had never heard about it. That only showed the necessity for enlightenment on Parliamentary matters even among Members of Parliament. This friend of his was a friend of Sir Frederick Banbury, the great opponent of the Bill, and had promised to try and induce Sir Frederick to take a more reasonable view of the subject. It only showed how necessary it was that they should have some sort of representation in Parliament. The medical profession

was strongly represented in the House, and could get practically what they wanted, whilst the veterinary profession was left behind.

Mr. PEMBERTON said this was a matter which should be pushed forward by each Association. Immediate and united action would carry the day.

Mr. GOOCH said that with regard to the rebate on petrol, he had already had his first rebate. Anyone working for the Board of Agriculture should have no difficulty in getting it.

After some further remarks, a resolution moved by the Hon. Sec. and seconded by Mr. Gibbings, was carried, urging each member of the Association to bring the matter before his own Member of Parliament, with a view to getting the same reduction in the motor tax as was enjoyed by the medical profession.

TUBERCULOSIS AND THE MILK SUPPLY.

By JOHN MALCOLM, F.R.C.V.S.

I am sure you will all be disappointed, as I need scarcely say I am, that it falls to my lot to be the introducer of the subject for your discussion to-day. We were all looking forward to a scientific treat from Major Taylor's promised paper of some aspects of an Army Veterinary Surgeon's work in war time; and none of you more regret than I that the exigencies of his military duties prevent his giving the paper he so kindly offered us. As the result of his inability we had to decide at very short notice on a subject for to-day's meeting. Now it so happens that recently I gave a paper on "Tuberculosis and the Milk Supply," before the Midland Association of Local Government Officers, and as it, at my request, had not been published, it occurred to me that this paper, with some necessary additions, modifications, and the elimination of certain sections, might not be unacceptable to fill the unexpected gap in this meeting's programme. Though this paper was originally prepared for a lay audience I thought there might be some points of interest in it even for a professional audience such as this. I am afraid I scarcely realised then the extent of the different requirements. A paper quite suitable for one audience may be quite out of place for another. I now see that the alterations, the additions, and the subtractions, which the short time at my disposal has permitted me to make are quite inadequate, and that nothing less than recasting and rewriting—in fact preparing another paper, would have sufficed for this occasion. Unfortunately this is impossible. Under the circumstances I feel I owe you an apology, and must ask your indulgence for submitting a paper that contains matters that you may regard as out of place here, and that you could well dispense with. I can only hope that such points as are of relevant interest together with the circumstances under which the paper is given may in some small measure exonerate me for taking up your valuable time at a period when time is of such vital moment to one and all.

Under normal circumstances the subject of "Tuberculosis and the Milk Supply," in one or other of its various aspects is one that might fairly be expected to appeal in some degree to the majority of our members, but in these critical days few of us in our spare moments can take any real interest in anything other than the war, its happening and prospects, or in subjects kindred thereto.

At the same time those who can sufficiently abstract their attention from these burning questions for a few brief moments may realise that our subject may not be entirely devoid of interest even in these days. We must not forget that, even if we achieve the speedy victory promised by our most optimistic prophets, our eventual position in the world must, to a not inconsiderable degree, be dependent upon the health and vigour of the rising and future generations. If the British people are

to continue in the front rank of the world's race they must be reared physically sound and fit, so that during their normal period of vigorous manhood they may continue fully charged with the requisite energy and "go" necessary for that position. No man whose vital force is being, or has been, sapped by any insidious, incurable, enervating disease, such as is commonly the case in tuberculosis, whether of human or bovine origin, can be depended upon or expected to maintain a position in the world's front rank.

Bearing this in mind, I venture to suggest that a discussion on tuberculosis and the milk supply, or for that matter on the origin and the prevention of tuberculosis under any circumstance is, if not of immediate vital importance, yet so close in line of vital matters as to amply justify any spare-time consideration we can now afford to give it.

At the meeting I addressed the other evening many members inevitably possessed a very imperfect knowledge of the etiology of tuberculosis. Here it can be accepted that all know that tuberculosis is a specific contagious disease of man and animals, due to the introduction of living tubercle bacilli into the body tissues, in which the growth and multiplication of these bacilli give rise to the diseased condition universally known as tuberculosis; that the disease always arises in this way, and in no other, and that without the introduction of such living tubercle bacilli there is no tuberculosis. Formerly, as many of you will remember, tuberculosis was very commonly regarded as an hereditary disease. It is needless to remind you that this has been proved to be an error. It is not hereditary in any true sense, and cases usually regarded as of hereditary origin are either cases of ante-natal infection or early post-natal infection. Whether the disease commences before birth or after birth the process is practically identical—the transmission of infection from infected to free. In other words, tuberculosis is simply a contagious disease. It is in fact one of those contagious diseases of which the causal organism is an obligatory tissue parasite, and in which the organism is almost exclusively found in the diseased lesions in the body or in the discharges from diseased parts.

From this it can be safely inferred that the stamping out of the disease is by no means impossible. Evidently what is required is either to prevent the escape of tubercle infection from the diseased, or failing that to prevent its transmission to the non-tubercular. This is easy to state, and not difficult to accept, but not necessarily easy to effect. To be successful, accurate diagnosis is essential. Diseases at one time classed as tubercular are now known to be non-tubercular. The tuberculin test, together with our increased knowledge of the life-history and habits of the tubercle bacillus and of its tinctorial, cultural and infective characteristics, afford means for more accurate differentiation than at former times existed.

The tubercle bacilli, as you know, are very resistant and difficult to stain, owing to their containing a large proportion of fatty and waxy substances. They have the further quality that when once stained they hold the stain with great tenacity, and will retain it in acids which would instantly decolourise other stained bacteria. As you know, several other bacteria possess similar acid-fast properties, and these collectively are termed the acid-fast group. The first discovered member of this group was the tubercle bacillus; the list is now a fairly long one, and will in all probability receive further additions.

When microscopic examination of any suspected material has revealed the presence of acid-fast bacteria but leaves the origin of such in doubt, a reliable opinion can usually be obtained by the inoculation of guinea pigs or other small mammals susceptible to tubercle with the material. It takes from three weeks to a

month to obtain a definite result. The actual time required varies, as in some other processes, according to the number and type of the bacilli in the material being examined. The more numerous the bacilli and virulent the type the more rapid and profound its effects on the living subject, and the more widespread and extensive the lesions found on post-mortem. Where one cannot employ the animal inoculation test, either from non-possession of the necessary license or other cause, one can always revert to laboratory culture methods; since these, though generally and naturally undertaken only by special bacteriologists, may nevertheless be successfully attempted by any laboratory-trained, up-to-date expert veterinarian. Time and practical knowledge are the chief essentials, as there is nothing in the procedure entailing the use of any very expensive or elaborate plant.

On most ordinary bacterial culture-media the tubercle bacillus does not grow. The late Professor Koch used as a culture medium clear blood serum coagulated by heat. A better one has since been found—the egg medium. Some other laboratory media are also employed successfully, provided about five per cent. of glycerine is present. Thus in preparing tuberculin, glycerinated broth is the culture medium generally employed. When the surface of a suitable medium is sown with tubercle bacilli and is incubated at 89° to 100° F., thin, scaly, greyish or dull white growth appears in two or three weeks' time. The rapidity, the extent and the appearance of this growth varies within certain limits according to the medium and the type of the bacilli sown.

At the present day, with tuberculin we can as a rule test any herd of cows under ordinary circumstances and recognise with 95 per cent. of accuracy those animals that are affected and those that are free; and generally by a subsequent test in a month or six weeks' time we can separate the doubtful 5 per cent. into affected and free.

In using tuberculin, one has always to remember that a recently infected animal may fail to react or may give a doubtful reaction: that after an infected animal has been tested the reaction to a second test within a month is frequently unreliable; and that animals injected weekly for a period seem to acquire a certain tolerance to tuberculin for a time, though such animals if left alone generally—probably in within three to six months' time—again become reactors. Again, when an animal is in a febrile state the reaction may be unreliable. Subject to these and some other defects, tuberculin is one of the most reliable diagnostic agents known to the veterinary world. It should be remembered also that tuberculin occasionally gives a local swelling reaction when it is rubbed into an abraded part of the skin, or injected into the thin skin at the base of the tail. It also frequently causes a temporary ophthalmia or inflammation of the surface of the eye when instilled into the eye; but in veterinary practice these tests are not nearly so reliable as the subcutaneous test, which under normal conditions is an exceedingly reliable diagnostic and is the test generally relied upon.

When one has established a tubercle-free herd and attempts to keep it up by the purchase of non-reacting cows, instead of by the home breeding and rearing of tubercle-free cows, he invariably finds that a certain percentage of the purchased cows soon become reactors, and soon—much sooner than is usually believed—become a source of reaction in others. The reason why some of these non-reacting newly-purchased cows should so soon become reactors is probably owing to one or other of the causes I have mentioned. In our experience there is only one safe way to deal with such a herd, and that is to keep the recent purchases isolated in a separate shed or box for a month and then retest them. But there is this to contend with—any that then react

will have to be sold or kept isolated, as vendors will not take back cows after a month's trial.

It is not my intention to discuss here the characters and uses of the different tuberculins, though I may say in passing that we rely almost exclusively upon the tuberculin from the Royal Veterinary Laboratory, Camden Town, London, issued for subcutaneous use. Our experience shows that with ordinary care it is almost absolutely reliable so far as the definite reactions and the non-reactions are concerned. But as we have sometimes doubtful reactions to deal with, I not unnaturally desired to see whether, besides the influences mentioned, they could in any degree be ascribed to the tuberculin, or to the operator, or to a herd's environment, or to some idiosyncrasy in tubercle-free doubtful reactors. As exporters of stock frequently stipulate that Pasteur's tuberculin shall be used for the animals they have tested for exportation—probably because of Pasteur's name and the existing powerful French veterinary influence in the Argentine, where most of our best exports go—I decided to employ the Camden Town and Pasteur's tuberculin in an equal number of similar cases and compare the results. I also asked Mr. Gold, of Redditch to adopt a similar procedure in a number of herds he was testing for us. We carried out a fairly large series of simultaneous testings. The results of our experiments were that we failed absolutely to find any benefit in the one tuberculin over the other, or any appreciable difference in the results following their use. Seeing that Mr. Gold's results and ours were indistinguishable, the test so far as it went seemed to exclude properly prepared tuberculins and competent operators as the responsible agents for the doubtful reactors.

I am still unable to apportion the degree of responsibility which should be ascribed respectively to environment and to individual influence or unexplained idiosyncrasy. When one, or perhaps two, doubtful reactors occur in testing a fairly large herd—as, for example, when one case occurred in a herd of 86 others, non-reactors, at Tyburn, or one case among sixty others, non-reactors, at Tardebigge ten days ago—there is no difficulty in ascribing such doubtful cases to some temporary aberrant influence acting upon the individual. Some observers feel inclined to ascribe most of these cases to the effect of oestrus. There is no question that oestrus is present in a number of such cases, and it is difficult to exclude it as a factor. But as many tubercle-free cows in oestrus pass the test satisfactorily and other tubercle-free cows not in oestrus give a doubtful reaction, one has to look for some other cause in many cases. Among these may be mentioned both imminent and recent labour.

While one can fairly ascribe many such cases to something connected with the individual, there are as certainly other cases that appear to be dependent in some way upon the environment. We had recently an illustration of this in a herd in Staffordshire. This herd was tested on December 30th by the local veterinary surgeon, a very careful, experienced, and able practitioner. The result was that out of forty-eight cows tested, eighteen gave a doubtful reaction. On February 17th the herd was again tested by the same veterinary surgeon who, on this occasion, however, had Mr. White acting in collaboration with him. This time forty-six of the forty-eight tested in December were re-tested, and ten gave a doubtful reaction. Four gave a doubtful reaction at both tests; eleven doubtful at the first passed the second test; three doubtful at the first failed the second; four doubtful at the second test had passed the first, and two doubtful at the second had failed at the first. Thus 37.5 per cent. of the herd gave a doubtful reaction in December. Of these, 61.11 per cent. were passed in February, 22.22 per cent. were again doubtful and 16.66 per cent. had failed. At the February test 21.74 per cent. of those tested gave a doubtful reaction;

of these 40 per cent. were formerly doubtful, 40 per cent. had previously passed, and 20 per cent. had previously failed. The fact that there was a doubtful reaction in over a third of those tested in December and in nearly a fourth of those tested in February seems to point to some general influence having been in operation.

Mr. White's report at the time on the subject is interesting. It incriminates the ventilation. He says: "It will be observed that the temperatures of many of the cows at the fifteenth hour have fallen 1.5 degrees to 2 degrees, and subsequently risen again at the eighteenth hour. This variation is explained by the fact that the cows on showing signs of restlessness at the twelfth hour were turned out to water from the sheds, which at that hour were decidedly hot and stuffy. The weather was rather cold and wet, and one or two of the cows when brought in again showed marked rigors. The cowsheds are good lofty buildings and their atmosphere when occupied should be cool and pure, if the ventilation were efficient. The inlet ventilation appears good, but the outlet ridge ventilation is undoubtedly insufficient. This is very clearly proved by the hot and stuffy atmosphere which I found in these sheds in the morning before the doors had been kept open for any length of time for cleaning out. This inadequate ventilation also accounts for the marked rises in temperature at the ninth and twelfth hours with a subsequent fall at the fifteenth hour shown in the temperature chart of the test in December."

Here it would appear that at least a number of the doubtful reactions were due to the abnormal heat and the impure air in the shed during the night and morning after injection, and that these were responsible for the marked rise of temperature in a considerable number of the cows at the ninth and twelfth hours. Also that the subsequent sudden exposure to pure, fresh, cold air with cold water *ad lib.* was followed by a corresponding marked fall in temperature. Not only, as we know, does exposure to hot, impure air in a shed containing infected cows tend to favour the spread of tuberculosis from affected to free, but from the evidence respecting this Staffordshire dairy herd, such air seems to be responsible for at least a number of cases of doubtful reactions in tubercle-free cows.

Since these doubtful reactors are a real source of trouble, annoyance and expense both to the owner and the operator, and provide the sceptic with a weapon to cast unmerited reflections against the accuracy of the test, it is desirable that all information we possess concerning these should be brought forward. We therefore particularly desire members in the discussion to favour us with their experience of such cases and their view of the causes which they consider give rise to them.

I may note here a point in connection with testing which is of interest, in that, so far as it goes, it corroborates the view that animals ought to be tested in a good atmosphere and under natural conditions. A herd, numbering thirty-two cows, which my colleague Mr. De Vine some years ago had to test, was kept out day and night both summer and winter. As the owner desired the cows to be kept out all night during the test, Mr. DeVine tested them at the usual hour in the evening and they were then turned out in the usual way. The next morning they were brought up at the ninth hour and kept in until the eighteenth hour. The result was highly satisfactory. There were no reactors and no doubtful cases. Since then this herd has been similarly dealt with twice a year and the result has always been equally satisfactory.

Mankind, domestic animals, and birds are all susceptible to tuberculosis, and members of all these occasionally or frequently—largely according to their exposure to and opportunity for infection—become naturally infected. Of these, the human subject and the ox may be regarded as the most susceptible. It would

be difficult to say which of these two is the more susceptible. The pig is probably the next most susceptible. In comparison with the occurrence of tuberculosis in these subjects, natural cases of the disease are relatively rare in the horse, dog and cat, and distinctly rare in the sheep and goat. But as Sir John M'Fadyean has convincingly taught and demonstrated, the relative frequency of natural attacks affords no real criterion of the actual susceptibility of a species to the disease. An apparent difference in susceptibility may simply be due to their living under different conditions for infection. Under experimental infection, the order of susceptibility becomes greatly changed. For example, sheep are very easily infected by inoculation and the disease in them usually runs a rapid course. Indeed, sheep appear to be even more susceptible to tuberculosis by experimental infection than the ox, and the infrequency of the disease in sheep under natural conditions must be put down to their outdoor mode of life, which does not expose them to great risk of infection.

Broadly speaking, tuberculosis is a disease of domestication. Animals in a state of nature are practically exempt. There are hardly any authentic cases of tuberculosis in wild animals, with the exception of burrowing animals, in their natural state. This is not due to natural insusceptibility, as a great many wild animals readily contract the disease when housed in zoological gardens. Their immunity is simply a consequence of their outdoor life.

Many practical men of wide experience say some breeds of cattle are more susceptible than others. On the other hand, M'Fadyean says that there is no evidence to show that any European breed of cattle has less or more susceptibility than any other breed, and that the observed differences in regard to the incidence in different breeds, for example, the frequency in Ayrshires and Shorthorns, and the relative rarity in Jerseys, Herefords, West Highlands, and Galloways, can be explained by the circumstances under which these animals live.

The degree of infection in Midland dairy herds tested by us has varied enormously. In one large herd in Staffordshire we found 84 per cent. affected. In a large herd in Warwickshire 58 per cent. were found affected. In a large herd in Worcestershire 72 per cent. were affected. A large herd on a farm nearly adjoining this Worcestershire farm was free. Another herd near Henley was also free, and recently Mr. White has found two free herds near Birmingham.

Neither in the Staffordshire herd referred to nor in the Worcestershire herd have any steps been taken to eradicate or even minimise the disease, and these herds continue seriously infected. The Warwickshire herd was dealt with by us, and now for some years has been absolutely free.

Though the evidence derived from experimental inoculation indicates that very few cattle of any breed are really immune to tubercular infection, and that it is very difficult to differentiate the real susceptibility of one breed from that of another, yet we are scarcely prepared to admit that all breeds are equally susceptible to infection, or, further, that all members of any one breed are equally susceptible. Anyone who goes into a dealer's shed and gets the option to purchase a dozen selected cows subject to their passing the tuberculin test, will find that a larger percentage of thick-skinned, indifferently-bred poor-milking types are tubercle-free and pass the test than is the case with well-bred, naturally thin-skinned, deep-milking types; and any farmer who has succeeded in securing an absolutely tubercle-free herd and is then unfortunate enough to introduce an infected cow into this herd will find in six months' time, if he then tests his herd, not only that several cows have become affected, particularly if the shed is small and badly ventilated, but that the newly infected are

not necessarily those standing immediately beside the introduced cow, but more probably cows standing here and there throughout the shed, and also the chances are that the majority of the recently infected cows will be some of the best—the thin-skinned, well-bred, deep-milkers.

We know that cows with fine thin skins have fine mucous membranes lining the digestive and respiratory tracts, and we may not unreasonably ask whether bacteria can more easily pass through a thin, fine membrane than a thick, coarse one. We also know that deep milking tends to weaken the constitution and lessen the resisting power against disease. We are convinced that deep milking breeds of cows with naturally fine skins and mucous membranes are more susceptible than others when kept under precisely the same natural conditions and submitted to the same degree of infection.

Any animal that is naturally susceptible to tuberculosis can be infected whatever the channel of entrance of the infection. The entrance may be by the digestive tract or by the respiratory, by inoculation under the skin, or into the blood vessels, or otherwise, but the result is practically the same; though no doubt the disease develops more rapidly after entrance by one channel than by another, as for example after intravenous or peritoneal inoculation than after subcutaneous inoculation.

At one time it was believed that infection by ingestion through contaminated food or water was the common way of infection in the ox. This is not so. It is now known that the mode of infection in that animal is by inhalation—by breathing infected air. In the horse and the pig, on the other hand, the common mode seems to be by ingestion. In the pig there is evidence of this in the early diseased condition of the throat glands.

As already stated, tuberculosis is most prevalent in man and cattle. In dairy herds in this country approximately one in every three cows, or 33 per cent., is more or less tuberculous. And you may accept it that practically all the infected cows contracted the disease by contagion after birth. I say this in all confidence, although I have already said that a few calves are affected when born, but these cases of what may be termed congenital tuberculosis are not due to heredity, but simply infection in the womb. The number of these, however, are few. Only one calf in about 2000 is tuberculous when born, and there is reason to believe that all these so affected wasters die or are killed off long before the cow age.

We are told that the cow is the only animal in which tuberculosis of the udder is not absolutely rare. So far as my experience goes it corroborates this. Probably on the average one to three per cent. of tuberculous dairy cows are infected in the udder, that is, approximately one-third to one per cent. of the dairy cows in this country are affected with tuberculosis of the udder. The proportion is greatest where obviously affected cows are kept alive.

As a rule it is only those cows that have tuberculosis of the udder that yield tubercle-infected milk. From the report of the Royal Commission it appears that some emaciated cows with advanced tuberculosis but free from tuberculosis of the udder also yield tubercle-infected milk. This is in accordance with our experience here.

Another source of tubercle infection in the milk may be the contamination of the milk with infected cow-dung. Even in the cleanest sheds it is difficult to prevent some contamination of the milk; where the cows and cowsheds are dirty and the milkers careless the extent of contamination is sometimes more than one cares to think can possibly be the case. Now it is well known that cows with tuberculosis of the respiratory as well as of the digestive tract have infected ex-

creta. This is not to be wondered at when it is remembered that when cows that are affected with tuberculosis of the lungs cough, though some of the expectorate is ejected through the nose and mouth, the most of it is swallowed, and living bacilli in this expectorate pass uninjured through the digestive tract.

Clearly not only emaciated tuberculous cows and cows with tuberculosis of the udder ought to be eliminated (as prescribed in the Milk Bill now in suspension until the end of the war), but all cows affected with tuberculosis in any degree ought ultimately to be eliminated from all dairy herds, and this ought to be on the Scheduled list of the State, and of every Health Authority, as one of the reforms that only await a fitting opportunity for attainment.

Tuberculosis of the udder usually begins at a definite point in one quarter of the udder (most frequently a hind quarter) and from there the disease slowly extends, giving rise to a cold, hard, gradually increasing swelling in the affected quarter, in place of the normal flaccid condition. After a time the disease not infrequently extends to one or more of the other quarters. The milk soon becomes infected, but its appearance and quantity is not at first much altered, and as a rule the dairymen are very sceptical as to there being anything amiss with it. But by-and-by the yield begins to decrease, the milk becomes thin and bluish, and the casein tends to separate. After a longer or shorter period the affected quarter or quarters cease secreting. The period during which a cow with tuberculosis of the udder may continue to yield milk varies greatly. Some time ago, as was mentioned to you at our last meeting, we purchased a cow with tuberculosis of the udder for Prof. Leith, who wished to have her milk for experimental purposes. She went completely dry in two months. She had only recently calved, and rapidly broke up after we purchased her. Later on we purchased another for him. She had been giving infected milk for at least a month before purchase. She has now been in our possession for seven months and is still giving a good daily yield of normal looking though infected milk, and seems likely to continue to do so for some time. She is not in calf. I showed you samples of her milk from each teat at our last meeting three months ago. The yield has lessened since then, otherwise its appearance is much the same. The daily yield has been taken each week. On February 3rd and May 18th it was respectively as follows:—

		Right		Left		Total	
		hind	fore	hind	fore	oz.	pints.
		oz.	oz.	oz.	oz.		
Feb. 3	a.m.	26	21	6	10	63	= 7
	p.m.	32	26	6	13	77	
May 18	a.m.	22	18½	4	9½	54	= 4.97
	p.m.	19½	14½	3½	8	45½	

The disease is evidently progressing very slowly. This may probably partly be the result of her environment.

The accurate diagnosis of tuberculosis of the udder is really a matter for the expert, and an inspector is somewhat handicapped in that he must not make a mistake. He may suspend decision for a time, but when his decision is given it must be right. The result of this is that it sometimes takes a longer period to get a definite decision than one could wish. When diagnosis can be made clinically there is no delay; when it can be made by microscopic examination of the milk a day or two suffices; but where the milk has to be submitted to the biological test three weeks or a month is required. This is rather unfortunate, as one has to decide what to do with the suspected milk in the meantime. Of course it should not be sold, but it may safely be used as calves' food, etc., if boiled before using. Against the disadvantage of the time required for biological test can be set this great advantage—that though a negative result may leave one in some doubt as to the

condition, a positive result can be accepted as infallible evidence that the milk is infected.

That there is danger in using tubercle-infected milk is now generally conceded. You will remember that after Koch's memorable pronouncement in 1901—that tubercular disease in man and cattle was not the same disease, and that it was unnecessary to take any preventative precautions with respect to infected milk—a Royal Commission was appointed to investigate the question. Bacteriologists all over the world took the matter up. The results of the investigations of the Royal Commission and other workers have proved beyond a doubt the transmissibility of the bovine tubercle bacillus from animal to man. The extent of this transmission may be disputable, but the fact of its occurrence is indisputable.

One of the most striking series of investigations, which prove the existence of bovine tubercle bacilli in the enlarged cervical glandular lesions of children, and their relative frequency, was carried out by Dr. A. Philp Mitchell in Edinburgh, 1911-1913, and was recorded in *The British Medical Journal*, Jan. 17, 1914.

Different characteristics connected with the bacilli afford the necessary basis for differentiation in investigations of this kind. For example, the bovine type of bacilli is much more virulent when inoculated into rabbits than is the human type, and it grows much more luxuriantly and rapidly on egg medium than the human type, and further, this difference in growth on culture media is much greater when glycerine has been added to the media.

Working on these and other recognised lines Philp Mitchell found that out of a total of seventy-two consecutive cases in children investigated by him, sixty-five instances or 90 per cent. showed that the bovine bacillus was present and only in seven cases or 10 per cent. the human bacillus. I admit these results show a greater relative degree of bovine tubercle bacilli in the tubercular lesions of children than those of most other workers, but in no records which I have read do the investigations appear to have been more carefully or exhaustively carried out. No one can question that we have here abundant grounds for the Government and our local Health Authorities taking up the matter of tuberculosis in dairy herds with a view to eliminating from these herds cows which infect the milk supply.

The present state of affairs cannot be permitted to continue. Indeed the powers that be have no intention that it shall. As all of you know, a National Milk and Dairies Bill with tuberculosis provisions is for the first time now upon the Statute Book. Unfortunately its operation has had to be suspended until the end of the war. When that occurs, this Bill will come into force. In many senses it is not a great Bill. Government would not attempt to pass any opposed Bill, so all contentious matter had to be eliminated. When it does come into force it will not perhaps greatly benefit Birmingham or any of the other large towns where dairy inspection has been in force for some time, but so far as the country generally is concerned its effects cannot fail to be beneficial. One of its weakest points, in my opinion, is that periodic systematic veterinary dairy inspection is an optional provision and not a compulsory one. In due course we may look to public opinion to remedy this and other defects.

The difficulties in the way of effecting complete eradication of bovine tuberculosis are admittedly great, and few people of much practical experience and knowledge are prepared to advocate the immediate attempt. This is an ideal for future effort. At present it can be accepted that the general prevalence of the disease, the time required to replace infected cattle by free, the extent of the veterinary and other administrative service necessary, and the cost involved make any very rapid extinction of the scourge impossible of attainment.

But, as I said elsewhere, I am hopeful that when once the necessary State measures have been adopted the period required for ultimate eradication will prove to be shorter than many anticipate. The process cannot fail to gain impetus and the final result will be hastened by the rapid education of stock-owners now going on as to the cause of the disease and its spread; also the methods by which the prevention of new cases may be secured and the eradication of existing cases most easily and economically effected.

The Royal Agricultural Society of England a couple of years ago at their experimental farm at Woburn in Bedfordshire gave a most illuminating demonstration on how to rear tubercle-free stock from tuberculous parents. The experiments were placed in the hands of Sir John M'Fadyean, and members of the Society were invited to witness the experimental animals. Many members, including myself, took advantage of the invitation. A number of known tuberculous cows in calf whose condition was verified by the tuberculin test and subsequently reverified on slaughter, were purchased and kept at one station of the farm until they calved. Immediately a calf was born it was taken away from the mother and removed to another station of the farm where there were only tubercle-free cattle, and reared there. They were kept until they were all at full maturity, and fattened fit for the butcher. They were then slaughtered and inspected by an expert jury of veterinary surgeons and meat inspectors. This jury reported the gratifying and instructive result that not one of these cattle, the progeny of tuberculous mothers, presented the slightest suspicion of any tubercular lesion in any part of the body.

In the year 1907 the extent of tubercle infection in our milk supply attracted the special attention of the Health Committee. It was found that fourteen per cent. of the milk coming to Birmingham railway stations from outside districts was tubercle-infected. In view of the second interim Report issued in January 1907 by the British Royal Commission stating that bovine tubercle bacilli in milk was a cause of tuberculosis in man, the heavy percentage of infected milk coming into Birmingham naturally caused serious consideration. The question was important, and the Committee desired full information of what others were doing before coming to any definite decision as to their own future procedure. Liverpool, Manchester and other Health Authorities were then also considering the same question, and a joint conference between Birmingham, Liverpool, Sheffield, Leeds and Manchester was held at Manchester, when the whole subject was discussed and a deputation appointed to wait upon the President of the Local Government Board to urge Government action. Subsequently, as some of you may remember, our Health Authority, having heard of the success of Danish experiments, sent in June, 1908, a deputation consisting of Alderman Dexter, Dr. Robertson and myself to Denmark to obtain first-hand information on Bang's work and its results.

Our trip to Denmark was a most instructive and enjoyable one, except perhaps the sea trip there, which I at least found very trying. We soon found that Bang's work was based on the knowledge that tuberculosis is a contagious disease and that spread in cattle occurs mainly in two ways:—first, by introducing diseased cows among healthy, and second, by feeding calves on infected milk.

By employing tuberculin he found he could easily recognise which cows were infected and which free. His aim has been to eradicate the infection gradually and with the least possible disturbance of the stock-owners' trade. In attempting this he has relied mainly on measures of segregation and isolation, and not on slaughter except in special cases. The clinical wasters and those affected with tuberculosis of the udder, being

manifestly especially dangerous from their extensive disease, are slaughtered. But in all cases where there is no clinical evidence of the disease he relies entirely on tuberculin in diagnosing, and then he secures the effective separation of the infected from the free cows as well as the immediate removal of new-born calves from their affected mothers. These calves are reared on sterilized or tubercle-free milk. Inferior milking, reacting cows, as soon as circumstances warrant are fed off for the butcher, but the good milking reactors may be kept for several years in isolation sheds, provided they continue to yield well and thrive well, and their milk remains free of tubercle infection. In this way, at comparatively little expense, there have been gradually reared up young healthy non-infected dairy herds of good milking strains to replace the former infected ones. At the time of our visit between six hundred and seven hundred young free herds had been established by these measures.

This work of Bang's has not been carried out at the cost of the Government. The Government has no doubt given some financial support to it by paying the veterinary surgeons' fees and supplying tuberculin free of cost, but the main cost has been undertaken by the dairy stock-owners. Much of the expense incurred has been to provide isolation premises in which to keep the infected apart from the free. The conservative procedure followed in only scrapping clinically affected cows has not involved much outlay to replace the slaughtered. To meet the cost of the procedure, however incurred, farmers have joined together in forming numerous small co-operative societies throughout the country. The members of these societies pay a *pro rata* annual subscription according to the number of stock they hold. Each society's proceedings are governed by an executive Committee who decides when and where the needful financial assistance shall be given.

On our way home we obtained at Kiel some first hand information of the German plan of dealing with tuberculosis—by the elimination of clinical cases, otherwise termed cases of "open tuberculosis."

On our return we reported what we had seen, and the Birmingham authorities were so impressed with the benefits that might be derived from a somewhat similar plan to the Danish one that they decided to inaugurate a local measure, offering to farmers within a certain radius of Birmingham, whose milk came to Birmingham, and who were willing to make a serious attempt to eradicate tuberculosis from their dairy herds, the services of their veterinary staff or of the owners' veterinary surgeons and a supply of tuberculin free of cost, on the following conditions:—That the herds shall be tested twice a year, that all reactors shall be effectually isolated in shed and at pasture and got rid of as soon as circumstances are opportune, that all new cows shall be tested before being admitted to the herd, and that the sheds shall be well ventilated, disinfected as required, and kept clean.

I may here say that the German method, or what has been termed Ostertag's method of dealing with tuberculosis in dairy herds was not favourably regarded by the Birmingham Health Authority, and since then my further experience convinces me that they were right in their view. Anyone dealing with the eradication of tuberculosis from dairy or from pedigree herds must admit that no herd could be cleared by such a method. It may somewhat diminish the extent of the disease but never eliminate it. Nothing less than diagnosis by the tuberculin test will suffice for eradication.

Broadly speaking, the effect of the Committee's foregoing offer appears in the following extract from my last issued report to the Medical Officer of Health:—

"During the year 26 herds were dealt with; 20 of these numbering 610 cows were free at the end of the

year; 3, numbering 121 cows, were being freed, and 3 herds, numbering 32 cows, were in suspense.

In four instances the testing has been discontinued; in one case the owner ceased selling milk; in two the owners deemed the procedure involved too much trouble; in the fourth the first test revealed so many reactors that the procedure was not continued, 78 per cent. having failed to pass the test.

The testing of these herds has been carried out half-yearly. The results of the testing show that breeding dairy herds into which only young heifers are introduced are more free from tuberculosis at the first test, and further that such herds can be maintained in a tubercle-free state much more easily and economically than herds which are kept up by the purchasing of mature milking cows.

Altogether 1383 cow-tests were made during the year, of these 1141 gave no reaction and 242 gave a reaction. (As the herds are tested twice a year, most cows were tested twice.)

The cows which failed were mostly cows which were purchased subject to passing the test, and having failed were returned to the vendors. The doubtful reactors already in the herd were isolated and retested a month subsequently. Approximately 75 per cent. of these eventually passed.

The newly purchased and other cows tested for the first time last year numbered 241. Of these 51, equalling 21.16 per cent. reacted, and 12 equalling 4.98 per cent. were doubtful; that is, 63 or 26.1 per cent. failed to pass the test as compared with a percentage of 32.4 in the preceding year."

Since this report was issued another two herds have been added to the tubercle-free list.

Besides dealing with tuberculosis in the foregoing manner, our efforts to eliminate tubercle infection from the milk supply has been continued on two other lines:

1. The systematic sampling and the bacteriological examination of the samples taken from the milk churns, with the subsequent examination of the dairy herd yielding infecting samples, followed by the removal of the offending cow or cows from the dairy herd. (Of the mixed samples taken from outside dairies 10 per cent. were found infected.)

2. The systematic examination of all cows in dairy herds within the city boundary and the elimination therefrom of any cow giving infected milk. That this examination is a fairly large order will be apparent when I state that there are in the city 157 cow-keepers, occupying 186 farms, and owning 2,244 cows housed in 360 sheds, and that each cow prior to the war was visited and inspected at least once a month, and since the war once every six weeks. On the whole, result so far as city cows are concerned has been highly satisfactory, only two cows in 2,244 being found giving tubercle bacilli in their milk and affected with tuberculosis of the udder.

Birmingham Corporation holds the position, so far as I know, of being the only local authority that has attempted to help farmers eliminate tubercle infection from dairy herds. London, Manchester, Liverpool, Sheffield, Leeds and other authorities have done much in tracing cows actually infecting the milk supply and eliminating such from the dairy herds, but they have not attempted to eliminate the non-clinical reacting cows. Birmingham also is the only one that has financially helped the farmer to bear the loss he has to sustain. Under the existing law there is nothing to prevent any farmer selling any cow to anyone for whatever he can get. All local authorities dealing with the matter have occasional experience of farmers taking full advantage of their powers and selling the offending cow. The purchaser in these cases is usually someone located outside the jurisdiction of the local

authority. Formerly Birmingham's experience was no exception to this. I brought the matter before the Health Authority and after full consideration they decided where there was any difficulty in securing the slaughter of such a cow, to authorise the veterinary inspector to negotiate with the owner for her slaughter by offering him any sum not exceeding £4 that the inspector deemed fair. This has ever since been in force except during the short period two years ago when the Board of Agriculture's Tuberculosis Order was in operation, under which Order Government provided the compensation. Since we obtained this power only one farmer has declined to have his cow at once slaughtered. And he must have afterwards wished he had accepted our offer, as he was rather heavily fined for failing to keep the cow in question isolated from his other cows, as is provided for under the Birmingham Corporation Act of 1903.

In view of the help Birmingham has been ready to give any farmers desirous of freeing their herds from the incubus of tubercle, some of you may wonder that more of them have not accepted Birmingham's offer. One of the chief reasons appears to be due to the difficulty farmers experience in getting an appreciably better price for milk from herds of tubercle-free cows than for milk from ordinary herds however highly infected. Last year one of the largest wholesale dealers declined to give any more for the one milk than for the other. And it was only after my own intervention that he consented to give a slightly better price for the supply from a fine tubercle-free herd than for his ordinary supply. The dealer put the onus for this solely upon the consumers. He said that he would willingly give more for the milk from free cows if he could sell it for more, but he declared he could not. It is very different in Denmark. For example, in Copenhagen all milk for children is guaranteed to be from free cows, and it brings a very appreciable increase in price over milk not so guaranteed. Under existing conditions price seems to be the crux of the whole matter. We have now reached the stage here that anyone desirous of getting the milk of tubercle-free cows for their children can do so if they are willing to pay a little more for it. Provided they are adequately rewarded, Birmingham dairy farmers are quite ready to supply any quantity of pure milk from tubercle-free cows. Without this cash incentive the large majority simply decline to take the extra trouble involved in supplying such milk.

It now seems to me very doubtful if under existing conditions the demand for such guaranteed milk for infants will give rise to any great extension of the present sources of supply unless Government takes the matter up in earnest. But the enactment that provides for this must be a much more thorough measure than the new Milk and Dairies Act. I have no hesitation in saying this. Though I advocated the passing of this Bill as a first step, yet no one more fully realises the utter futility of its tuberculosis provisions from any eradication point of view than I do. But I am not without hope that, notwithstanding the war, Government will at no very distant date find sufficient cash and courage to tackle the bovine tuberculosis scourge on a sound scientific and business basis.

Personal.

SEARBY.—On Friday, 26th May, at Ramsey, Hunts, to the wife of B. A. Searby, M.R.C.V.S.—a daughter.

Mr. JAMES R. JACKSON, M.R.C.V.S., Coleraine, was amongst the prize winners at the show of the Coleraine Agricultural and Industrial Association, Ltd., on the 6th inst., and Mrs. J. R. Jackson won the cup for the best two-year-old harness gelding or filly.

Mr. H. L. CHAMBERS, M.R.C.V.S., Banbridge, took first prize, with his Spook II., in the section for horses at the Summer Show of the Portadown Agricultural Society.

ARMY VETERINARY SERVICE

Extracts from *London Gazette*,
WAR OFFICE, WHITEHALL, June 9.

REGULAR FORCES. ARMY VETERINARY CORPS.

June 12.

Temp. Lts. to be temp. Capts.:—E. J. Tomlin (May 19); F. S. Warburton (May 27); F. Booth, P. G. Ledger, H. G. Simpson, A. S. Ferguson, G. Simons (June 1).

June 13.

To be temp. Lieut.:—V. L. Banks (May 9).

June 9.

SPECIAL RESERVE OF OFFICERS.

Lieut. W. J. Bambridge to be Captain (Dec. 23, with seniority next below T. M. Mitchell).

The following casualty is reported:—

DIED—Dresser C. C. Doak, 716, S. African V.C.

June 15.

The following dispatch has been received by the Secretary of State for War:—

General Headquarters, April 30.

Sir,—I have the honour to forward herewith the names of those under my command whom I wish to bring to notice for gallant and distinguished conduct in the field.

I have the honour to be, Sir, your obedient servant,

D. HAIG, General, Commander-in-Chief
The British Forces in France.

STAFF.—ARMY VETERINARY CORPS.

* * * * *

Lt.-Col. H. J. Axe, Maj. D. Bolton, Maj. G. Conder, Maj. O. S. Fisher, Maj. P. J. Harris, Maj. G. T. T. Jackson, Maj. A. Leaning, Maj. W. Ludgate, Maj. D. Macdonald, Maj. (temp. Lt.-Col.) W. A. Dougall, F.R.C.V.S., (T.F.), Lt.-Col. E. E. Martin, F.R.C.V.S., Lt.-Col. A. C. Newsom, Temp. Maj. G. B. C. Rees-Mogg, (Vet. Capt. 1st L. Gds.), Capt. (temp. Maj.) R. Tindle.

ARMY VETERINARY CORPS.

Maj. (temp. Lt.-Col.) J. J. Aitken, Maj. T. E. Burridge, Capt. (temp. Maj.) J. R. Hodgkins, F.R.C.V.S., Capt. (temp. Maj.) V. C. Leckie, Capt. S. W. Marriott, Capt. A. A. Pryer, Capt. U. W. F. Walker, Lt. C. J. R. Ryan (s.r.), Lt. C. Tracy (s.r.), Qmr. and hon. Lt. W. J. Alderson, Qmr. and hon. Lt. J. Fisher, S.-Sgt. (temp. Sgt.-Maj. R. J. Bales, 65, S.-Sgt. (temp. Sgt.-Maj. T. J. Sutton, 105, L.-Cpl. (temp. S.-Sgt.) T. A. Cox, 517, Pte. (temp. S.-Sgt.) J. Crawley, 569, Pte. (temp. S.-Sgt.) J. Ewing, S.E./610, Temp. S.-Sgt. W. J. Fermor, 115, Pte. (temp. S.-Sgt.) J. Ruddy, 552, Pte. P. F. Flood, S.E./6724, Pte. W. Roullier, S.E./155, Cpl. C. J. C. Wilton (s.r.) 11.

Supply of Petrol in Ireland.

The Major-General in Charge of Administration, Irish Command, announces that in Dublin City all restrictions regarding the sale of motor spirit have been removed.

At other places in Ireland there are no restrictions excepting that persons can only obtain petrol through the local police authority; therefore, any difficulties experienced by would-be purchasers should be referred by them to the Inspector-General, Royal Irish Constabulary, as there is no limit to quantities which vendors may remove by authority from Dublin.

SUBSCRIPTIONS TO R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following subscriptions for 1916 to the College funds :—

J. Abson, Major A.V.C.	£1	1	0
W. Anderson, Capt. A.V.C.	1	1	0
E. F. Angler, Capt. A.V.C.	1	1	0
A. Barr, Capt. A.V.C.	1	1	0
D. J. Barry, Major A.V.C.	1	1	0
J. Blackburn, Capt. A.V.C.	1	1	0
J. C. Blake, Newport, Isle of Wight	1	1	0
W. A. I. Buchanan, Capt. A.V.C.	1	1	0
J. Buxton, London	1	1	0
F. L. Carter, London	1	1	0
J. M. Culhane, Lieut. A.V.C.	1	1	0
H. C. Dibben, Major A.V.C.	1	1	0
A. J. Dobbyn, Waterford	1	1	0
W. P. S. Edwards, Capt. A.V.C.	1	1	0
T. A. McC. Finch, Lieut. A.V.C.	1	1	0
J. D. Fulton, Bexley Heath	1	1	0
F. W. Garnett, Windermere	1	1	0
F. C. Gavin, Major A.V.C.	1	1	0
J. A. Gold, Redditch	1	1	0
W. G. Green, Capt. A.V.C.	1	1	0
D. C. Greene, Capt. A.V.C.	1	1	0
D. Hamilton, Ballina	1	1	0
W. Harley, Lieut. A.V.C.	1	1	0
J. W. Hayes, Edinburgh	1	1	0
S. E. Hill, Capt. A.V.C.	1	1	0
S. Hunter, Capt. A.V.C.	1	1	0
Hunting, C. S., Sen., Haswell	1	1	0
Hunting, C. S., Jun., Loughborough	1	1	0
P. D. Huston, Capt. A.V.C.	1	1	0
E. E. Jelbart, Capt. A.V.C.	1	1	0
H. King, London	1	1	0
W. S. King, London	1	1	0
R. E. Leach, Capt. A.V.C.	1	1	0
R. G. Linton, Edinburgh	1	1	0
G. H. Locke, Manchester	1	1	0
H. J. Lowe, Capt. A.V.C.	1	1	0
J. Macfarlane, Lieut. A.V.C.	1	1	0
A. MacIntosh, Lieut. A.V.C.	1	1	0
W. F. Morton, Capt. A.V.C.	1	1	0
W. S. Mulvey, Major, R.E.	1	1	0
C. F. Parsons, Cheltenham	1	1	0
A. E. Payne, Weybridge	1	1	0
C. E. Perry, Staple Hill, nr. Bristol	1	1	0
J. Player, Capt. A.V.C.	1	1	0
J. Reilly, Lt.-Col., Adare, Co. Lim.	1	1	0
H. H. Roberts, Leatherhead	1	1	0
C. Rutherford, Col. A.V.S.	1	1	0
S. H. Slocock, Hounslow	1	1	0
J. M. Smith, Capt. A.V.C.	1	1	0
G. Stevenson, Kirkwall, Orkney	1	1	0
J. C. Storie, Capt. A.V.C.	1	1	0
J. L. Taylor, Lieut. A.V.C.	1	1	0
E. J. Thorburn, Crewkerne	1	1	0
P. R. Turner, Lieut. A.V.C.	1	1	0
C. E. Wells, London	1	1	0
S. Wharam, Leeds	1	1	0
G. Whitehead, Lieut. A.V.C.	1	1	0
J. E. Young, Capt. A.V.C.	1	1	0
Previously acknowledged	440	1	6

£500 19 6

Note.—The address of Mr. A. E. Roberts, given in the list on p. 485, *V.R.*, Apl. 22nd, should be Chepstow, and not Bournemouth as stated.

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donations are reported :—

H. E. Gibbs, Major A.V.C.	£2	2	0
C. F. Parsons, Cheltenham	1	1	0
Previously reported	190	15	3

Total £193 18 3

THANKS TO ELECTORS.

I desire to convey my most sincere thanks to every member who voted for me at the recent election for members of Council.

Lanark, 10th June.

PETER WILSON.

ROYAL COLLEGE OF VETERINARY SURGEONS,
10 RED LION SQUARE,
LONDON, W.C., June 14, 1916.

PETROL CENSUS.

In reference to the order issued by the Board of Trade, requiring a return as to the consumption of motor spirit, I have ascertained from the Petrol Control Committee that Veterinary Surgeons should fill up form No. 1. *They should, however, state on the form that the spirit is required in connection with their veterinary practice*, and I am assured that if this is done the forms will be properly sorted out and that the requirements of Veterinary Surgeons will be safeguarded.

PETROL SUPPLIES.

I am informed by the Secretary of the Petrol Control Committee that if any Veterinary Surgeon, who is unable to obtain adequate supplies of petrol, will inform the Committee of the brand of spirit he uses, the number of gallons he requires, and the name and address of the firm or company that usually supplies him, arrangements will be made to meet his requirements.

Letters should be addressed to the Secretary, Petrol Control Committee, 29 Abingdon Street, Westminster, London, S.W.—Yours faithfully,

FRED BULLOCK, Secretary.

CORRESPONDENCE.

THE TAX ON MOTOR LICENSES.

(The following letters from Members of Parliament have been forwarded to us for publication.)

House of Commons,

31st May, 1916.

My dear Sir,—I have your letter of May 29th, and quite agree with you in thinking that a veterinary surgeon ought to have the same advantage as that given to the medical profession with regard to the car which he uses. I shall therefore be pleased to support Mr. O'Connor's Amendment when the time comes. Yours faithfully,

J. H. Carter, Esq.

PHILIP MOWELL.

House of Commons,

May 31, 1916.

Dear Mr. Over,

The suggestion in favour of veterinary surgeons seems to me fair, and I will do what I can in the matter. I hope you are well. Yours sincerely,

JOHN BAIRD.

Berkeley House, Hay Hill,
Berkeley Square, W.
23rd May, 1916.

Dear Sir,—I am in receipt of your letter of the 22nd, and shall be pleased to support the Amendment in Committee on the Motor License, to reduce same for motors used by veterinary surgeons for professional purposes. I remain, yours faithfully,

T. Cozens Garry, Esq., F.R.C.V.S., SAMUEL SAMUEL.
Spencer Park, Wandsworth Common.

Smith's Lawn, Sunningdale.
8th June, 1916.

Dear Sir,—I am heartily in sympathy with the Amendment to the Finance Bill providing for a rebate of half the license duty on motor cars used by veterinary surgeons, and if I have the opportunity will give it my support and vote.

Yours faithfully,
D. Forwell, Esq., Towcester. E. A. FITZROY.

House of Commons,
June 6, 1916.

Dear Sir,—I have received your communication with reference to the amendment to the Finance Bill providing for a rebate of half the licence duties on motor cars used by Veterinary Surgeons for professional purposes.

I hope the Chancellor of the Exchequer will see his way to accept the amendment. I am, yours faithfully,
J. HERBERT ROBERTS.
David Evans, Esq., M.R.C.V.S., Llanrwst.

Stornoway, N.B.
7th June, 1916.

Dear Mr. Dixon.

Your letter reached me after I left London, and only on my return here from a cruise.

I am sorry that I am unable to take any action in the House, for I fully sympathise with your point of view.

I have not seen the papers and do not know what action was taken in the House, but, if the matter has not yet been dealt with, I shall be pleased to write to some friends to obtain serious support for the Amendment. With kind regards, sincerely yours,

NORMAN CRAIG, K.C., M.P.

Granville House, The Grosvenor,
Margate, 13th June, 1916.

Dear Mr. Craig,

Thanks so much for your kind letter, promising to interest yourself with the subject about which I wrote. The matter has not yet been dealt with, so that as you will in all probability be absent from the house yourself, your kind offer to write to friends as promised, to interest themselves on behalf of the veterinary profession will be greatly appreciated. I know your time is taken up a great deal "doing your bit," and that is all the more reason why I feel doubly grateful to you for your kindly interest. I shall be glad to hear from you what promises of support you have received, as the members of the profession as a whole are working to attain their ends. With kind regards, sincerely yours,

E. LYNNE DIXON, M.R.C.V.S.
(President S.E.V.A.)

DISEASES OF ANIMALS ACTS 1894 to 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange.‡		Sheep Scab.	Swine Fever.	
	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.	Outbreaks	Animals.		Outbreaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
Gr. BRITAIN.											
Week ended June 10	10	11			1	1	32	94		121	358
Corresponding week in											
1915 ...	8	8			4	4	20	41	1	123	720
1914 ...	12	18			5	26	28	40		121	1074
1913 ...	13	15			2	5	61	126	1	66	772
Total for 24 weeks, 1916 ...	800	356	1	24	23	64	1451	3378	173	2399	7540
Corresponding period in											
1915 ...	342	379			19	24	1372	1827	156	2089	9742
1914 ...	413	440	11	74	48	116	1816	2361	145	2009	20223
1913 ...	306	330			81	231	1594	3265	121	1116	16095

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

Board of Agriculture and Fisheries, June 13, 1916

† Counties affected, animals attacked:—Stafford 1. Excluding outbreaks in army horses.

IRELAND. Week ended June 3	...	...	...	...	...	...	Outbreaks 2	1	8	48
Corresponding Week in										
1915 ...	...	...	...	...	...	...	7	5	10	34
1914 ...	...	...	1	14	...	...	1	1	3	35
1913 ...	...	...	...	...	...	...	1	3	8	19
Total for 23 weeks, 1916 ...	2	6	...	...	...	...	31	214	138	732
Corresponding period in										
1915 ...	1	1	...	...	1	3	30	245	131	773
1914 ...	1	1	75	955	...	...	46	336	107	552
1913 ...	...	...	...	...	...	...	88	291	75	455

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, June 5, 1916
NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1459

JUNE 24, 1916.

VOL. XXVIII.

CLINICAL DISCUSSIONS.

The growing practice of devoting much of the time at professional meetings to the discussion of cases continues to bear good fruit; and the report of the Central Society's meeting printed to-day well illustrates it. The President's careful account of a case of equine malignant œdema is of value; but the more generally interesting subjects discussed relate to canine practice.

Three members described experiences proving that long-standing cases of paralysis after distemper may recover, provided they get proper attention for a sufficiently long period. Many owners will not give this; and it would be unwise for a practitioner to try to persuade these to do so—the most probable sequel would be a half-hearted attempt, failure, and mutual dissatisfaction. But there are others who will take infinite trouble over a dubious case for many months; and it is possible that practitioners are sometimes too apt to discourage them from the undertaking. So few of these cases ever receive long and persistent treatment that the recorded recoveries afford good ground for the belief that the condition is far more hopeful than is generally supposed. One thing is certain—that every clinician of experience in canine practice can remember the destruction of cases as hopeless after much shorter periods of treatment than those mentioned at the Central Society's meeting. Perhaps the whole subject of paralysis, including the detailed study of the anatomy and physiology of the nervous system, deserves more attention than it has yet received from practitioners. The majority of paralysed animals cannot receive adequate treatment; and perhaps that fact leads us to be often too hasty in forming unfavourable prognoses regarding the minority.

Another item of considerable interest, though the cases it concerns are by no means so common as those of the paralysis of distemper, was Mr. Livesey's observations of the effect of narcosis or anæsthesia upon paroxysmal colic in dogs. The question naturally arises—what was the cause of this acute condition that yielded so readily to such treatment? Mr. Livesey's suggestion of "some neurosis" seems the only one that fits in with the facts; but, when accepted, it still leaves us very much in the dark. Altogether this clinical discussion was very instructive. It showed how much practitioners have still to learn; it also showed how much they may learn from each other.

MILK FEVER.

Subject, a Guernsey cow 15 years old, calved by present owner three times.

She aborted at the period of gestation, 6 months, 3 days. This occurred on Thursday morning. I saw the cow at 11.30 a.m. A small portion of the placental membrane showing the cotyledons of a grey colour, yellowish and of a mousey odour. The foetus entirely devoid of hair. No microscopic examination made, the case being typical.

Cow isolated. In the afternoon about 5, I received a telephone message to call and see cow, it being uneasy and rambling in its walk. Sent word to get her indoors.

On my arrival she was in the cow-house, down and unable to rise, but had made attempts from time to time. No appearance of milk fever. Gave instructions and left.

At 11 p.m. same day received another message saying that, according to the opinion of a neighbour, a dairyman, the cow was showing signs of milk fever. I went out and found this so. Cow down, unable to rise, head turned back, grinding its teeth.

Injected udder, gave medicine and left some for the night.

Friday, cow down all day.

Saturday morning same, but appetite had returned. I sent tonics; quinine, acid nitro-mur. dil. and Tr. nucis vom. The faeces and urine became normal.

Sunday, cow got up at 2 a.m. apparently completely restored, and is now doing all right.

Contrast the duration of treatment with that of 30 years ago!

P. G. BOND, M.R.C.V.S.

EQUINE ANÆSTHESIA.

Since the time when Prof. Hobday and others brought to our notice the utility and safety of large doses of morphia given hypodermically to dogs before operations, I suppose some hundreds of veterinary surgeons have had occasion to feel grateful to them for publishing their experiences. When working alone it is such an ideal help to be able to employ an anæsthetic that is efficient and which requires no further watching as to its effects after injecting the dose. My object in writing now is to induce any member who has been successful with any anæsthetic (other than chloroform) on the horse to give the profession the benefit of his experience.

Any operation on the horse necessitates one of three things:—The objectionable operating on a

moving and fighting animal when nothing but a twitch is employed; (ii) casting the horse with hobbles, which operation requires many helpers; (iii) the employment of chloroform, in which case the veterinary surgeon has to do two things at once, *i.e.*—to control the anaesthesia, and to operate.

The first and second methods take no notice of the pain caused to the patient, which is an added objection.

It seems reasonable to assume that there is some drug which we could employ, if it were discovered, which would give an insensibility to pain, such as two or three grains of morphia provide for the dog, and very possibly some of our members have useful knowledge on the matter if they could be induced to publish it.

Has anyone given *Cannabis indica* an extended trial? When opportunity offers I intend to experiment with this and other drugs, but in private practice the chance only comes occasionally. Perhaps our military friends and the schools find their opportunities more numerous.

I have been disappointed with Chloral hydrate; it has some effect, but appears to affect the legs more than the brain, and a horse under its influence seems to be inclined to fall on the operator, and is only very partially insensible to pain.

I sincerely hope that this note may bring forward some others on the subject.

Hurst Green, Sussex.

J. H. RIPLEY.

THE CENTRAL VETERINARY SOCIETY.

[NATIONAL V.M.A. SOUTHERN BRANCH.]

An ordinary meeting of the Society was held at 10 Red Lion Square, London, W.C., on Thursday, June 1st, Mr. W. R. Davis, President, in the Chair.

The following Fellows signed the attendance book:—Messrs. N. Almond, J. B. Buxton, W. Roger Clarke, B. S. Cockerton, G. S. Heatley, W. S. King, G. H. Livesey, E. Lionel Stroud, W. Norman Thompson, J. Willett, and Hugh A. MacCormack, Hon. Secretary. Visitor—Lieut. P. Connolly, A.V.C.

The minutes of the last meeting were taken as read and confirmed, on the proposition of Mr. Almond, seconded by Mr. Willett.

CORRESPONDENCE.

The HON. SECRETARY announced that Messrs. McIntosh, Price, and F. W. Willett regretted their inability to be present, as also did Mr. Perryman, who was recovering from an attack of German measles. Mr. Perryman also said he thought a large sum should be voted to the Royal College as the Society considered it could afford.

Mr. J. WILLETT said Prof. Wooldridge asked him to express to the meeting his regret that he could not be present.

The PRESIDENT announced that at the meeting of the Council just held, 20 guineas had been voted to the Royal College.

On the motion of Mr. Lionel Stroud, the meeting expressed its regret at the illness of Mr. Perryman.

CASES OF INTEREST.

Mr. LIONEL STROUD hoped that some members would be able to elucidate for him a point which had been puzzling him recently. He went in for breeding chickens, and out of two batches this week he had two eggs in

which the head of the chicken was at the narrow, instead of the wider end where the air space was situated. He had been wondering how those chickens managed to breathe. In each of those abnormal cases he had to help the exit by breaking the shell. The chicken had been able to crack the shell, but was unable to make the circular motion necessary to remove the top. He had only those two cases out of 47 births in 60 eggs.

Mr. WILLETT mentioned the case of an elk-hound bitch. Five months ago she developed distemper, and then had pneumonia, followed by paralysis. Fortunately she belonged to a semi-invalid who had a resident nurse, and the latter was devoted to the animal, and kept it clean from all faecal matter, and held it out every time it had nature's call, as a child would be tended. Now, after five months, it was beginning to walk. That showed that even if there were paralysis of long standing, cases of the kind were not hopeless, provided they were carefully nursed. The nurse had been applying the battery ever since, and it was only during the last six weeks that there was any response to the current.

Mr. LIVESEY said he had a similar case to Mr. Willett's, that of a well-known Pekinese dog, which was still winning prizes. When a puppy, with 23 others it contracted distemper, in the course of which it went totally blind and became paralysed. Mr. Sewell went down once to have a look at it for him, and agreed that the best thing was to put the dog out of its trouble. The lady owning it, an American, had a very strong dislike to the taking of life of any kind and in any form, and she refused to have the dog destroyed, saying that it must take its chance. The dog was, therefore, kept more or less swung in a leather sling. It remained paralysed for nearly five months, and was totally blind for over seven months. Afterwards, however, the dog took two championships at the Crystal Palace, and was now perfectly fit, and had no twitch or other sign of chorea. That case also showed that what were apparently the most hopeless cases would get well, and should not be despaired of if given proper care and attention.

He wished to relate a case which had recently happened in his own practice. The animal was a little West Highland terrier, to which he was called as it was suffering acute paroxysmal abdominal pain. The bitch would scream and cry, and throw herself on the ground, and it gave one the general impression of having swallowed a bone which had become impacted in the intestine. He felt her abdomen very carefully all over, but was unable to find any hard substance anywhere. During the afternoon a large dose of castor oil had been given, a little over an ounce, he believed. That passed quite well, without causing any undue pain, and no special straining was apparent. Practically nothing was brought away with it, however, except a little bile and intestinal mucus. During the next six hours he gave her about 8 grs. of opium, but the effect of that was, apparently, *nil*. Next morning, as she was in the same pain, he gave her an injection of morphine and atropine, a fairly large quantity. She remained under the influence of that eight hours; and when coming out of it she seemed to be much frightened. She was still more or less in pain. She then passed a copious amount of urine, and from the moment of doing so was well, and had remained so ever since. If he had had such a case a year or two ago, he would have been inclined to do abdominal section to ascertain what was the condition of affairs; but he had similar cases now in which the dog had been in acute pain from a cause which it seemed impossible to determine, and he found that giving it a narcotic, or even putting the animal under chloroform for half an hour, had a wonderful effect in putting the animal right. He knew two cases which happened in human beings who were suspected to have appendicitis. Abdominal section was carried

out, but nothing abnormal found, and the wound was closed. But when the patients had recovered from the anæsthetic the pain had gone, and the recovery was uninterrupted. The surgeon who operated upon those two cases, and told him about them, said it was either the influence of the narcotic which was responsible for putting the patient right, or it was the letting in of a little air into the abdominal cavity. He had had three cases in animals—one dog and two bitches—in which there had been acute abdominal pain, the cause of which he had been unable to ascertain, and in which there was complete recovery on emerging from the influence of the narcotic which was given. The only explanation he could suggest was that the pain was due to some neurosis.

The PRESIDENT, discussing Mr. Livesey's case, said, members would have seen cases of paralysis get better after the distemper had passed off, but he would be glad to hear what was thought to be the cause of the blindness in the case. In a great number of cases dogs were permanently affected, but he had seen them get better under the administration of arsenic, though he did not know whether the recovery was due to the arsenic. He asked whether there was any conjunctivitis, iritis, or ulceration of the cornea in this case.

Mr. MACCORMACK, discussing Mr. Willett's case of paralysis in an elk-hound, said that the more one saw of such cases of distemper followed by paralysis, the more hopeful one felt about the prognosis. He remembered the case of a fellow who had a St. Bernard with a bad attack of distemper. It got over the distemper apparently well, but he was surprised to find paralysis develop, which lasted three months, the hind legs being quite useless, so that his progression was like that of a seal—the hind legs stretched out at the back of him. He treated the case with good nourishing food and tonics, and resorted to the hypodermic injection of strychnine. The dog gradually got better, and at the end of four months there was nothing left to show that it had been ill. He, of course, did not wish it to be inferred that he thought all such cases got better. He commenced with 1/400th gr. of strychnine hypodermically, and gradually increased that to 1/200th; as much as 1/100th could be given to a large dog—the dose was largely determined by the size of the animal. This St. Bernard was about a year old.

Mr. LIVESSEY, in reply, said he presumed that the blindness in his case was due to a nerve infection: it was what was termed amaurosis, in which condition the pupil was widely dilated and the eye glassy, and as the sight came back, the pupil regained its normal appearance. He did not think that in these cases there was permanent change in the back of the eye, though probably in some such cases there was. In two blind dogs he had known the optic nerve to have become fibrous. There was no keratitis or ulceration of cornea in this case: earlier the dog had many convulsions.

Mr. WILLETT, in reply, said the dog he referred to had been injected with strychnine, in the way suggested by Mr. MacCormack. A week ago she could stand, and walk a few steps. To-day, after not having seen her for ten days, he saw her running about.

Mr. ALMOND said a case which members might find interesting was that of a cow. He was asked to go and see a cow which could not calve. He found the head born, and one forelimb back. He removed the calf's head and atlas, cutting the skin in front of the ears. He put a rope on the skin covering the stump, pushed it back, and delivered the calf by pulling the foreleg forward. That occurred on the Sunday. As he did not usually attend that man's animals, he was not asked further to attend the case. But on Wednesday night, at 7 o'clock, he was telephoned for as the cow was very ill. When he arrived he found the udder very distended and hard, surface temperature low but not

cold, and the swelling extended along the floor of the abdomen. On pressing the teats, a clear fluid was exuded. It appeared that this udder had gradually become bad, but the cow had been feeding very well for three days. The temperature on this second visit he found to be 106° F., and his conclusion was that it was a case of gangrene of the udder. His object in bringing the case forward was to elicit opinions as to the best way of treating the case. It was an advanced case, and his view was that no good would result from treatment. He advised the owner to that effect, and, accordingly, the cow was killed. The question was as to whether there were any elements of recovery in the case. His suggestion was that the cow was suffering from gangrene from plugging of the veins, or from toxæmia the result of the decomposition of the contents of a milk sinus. He considered that if these milk sinuses had been opened at an earlier stage in the case and washed out, there may have ensued recovery by the removal of the material which was the source of the trouble. He had had a number of such cases, but never found one recover, the reason being, he thought, that he had always been called too late to do anything effectual. He had also had a number of similar cases in ewes, in which gangrene of the udder occurred. Some of those cases, if seen early, he regarded as operable in the way he had mentioned, and had recoveries after operation. He asked whether any member had treated cases of the kind in that way, and if so, with what result?

Mr. WILLETT asked whether the udder was abnormally hot, and tender to the touch, and were all quarters affected alike? If it were gangrenous mammitis he would have expected the udder to be cold and sweating.

The PRESIDENT asked whether the operation mentioned by Mr. Almond was cutting off the teat and exposing the sinuses? In all cases of gangrenous mammitis a dark-red foetid material came away from the udder. From the description he did not regard this case as one of gangrene of the udder; in each case of that condition which he had seen the whole quarter sloughed out and a particularly foetid material exuded. These cases were practically always hopeless. Sloughing of one quarter of the udder coming later, might be followed by recovery.

With regard to the calf whose head and one foreleg were born, he thought it possible to complete the birth of such a case by just pulling methodically.

Mr. ALMOND said it was a common practice to cut the teat off in such a case as he had narrated. His idea was to cut into the sinuses and lay them open at the base of the teat. In this case the earliest symptoms had passed off: all the four quarters were affected, not only the udder, and the swelling had extended along the floor of the abdomen as well. Undoubtedly the udder had been hot, but that stage had passed off when he saw the cow. Had that not been so, he would have considered there was some chance of success from operation. He considered there was a blocking of the blood vessels. Nothing but a watery fluid came away: the skin was discoloured. The kind of case referred to by the President was entirely different from this. This was an acute case, but those in which there was supuration of the quarter were old-standing cases.

The PRESIDENT: Within less than a week of very acute mammitis you may have gangrene of the udder, with the material I have mentioned coming away.

Mr. ALMOND: There was no sign of that in this case; the whole udder was a hard mass, and there were red radiating lines in the skin.

In reference to the birth of a calf, the people had been at work at it for about seven hours before he got there, and they had exerted all the power they had got at their disposal, but unsuccessfully. He got it over in half-an-hour.

The PRESIDENT desired to record a case he had of malignant oedema in the horse, 3½ weeks ago. The horse was put into the stable on Saturday night apparently all right, but on Sunday morning the man found it had not eaten the food placed there for it. On examining the horse, he found the head swollen on one side more than on the other. He bathed it with warm water. Towards midday, however, the head was getting larger, and he received a telephone message to come and see it. When he arrived in the afternoon he found the head greatly swollen, particularly on the near side, so that the oedema closed the eye on that side. The swelling extended down the cheeks over the nasal bones. Both lips were swollen, and were separated some distance from the incisor teeth. On putting his finger into the mouth, he found the buccal mucous membrane in swollen ridges, and from the nostrils there came a purulent discharge. Breathing was conducted with great difficulty. It was usually stated that in malignant oedema there was a high temperature and great disturbance of the heart, but in this case the temperature was but little raised above the normal. The heart condition would not have suggested to anyone that the horse was suffering from a fatal disease. He gave an intravenous injection of iodine. He was not quite sure of the diagnosis at first, because such cases were not often seen; he hesitated between purpura and malignant oedema, but there were no petechial spots, nor swelling of the limbs. Next morning he went again, fairly early, and found the breathing much worse, causing much distress. He had not his tracheotomy instruments with him, but he opened the trachea and stitched back the edges, this greatly relieving the difficulty of breathing, and in the afternoon he returned and inserted a tube, at the same time repeating the iodine injection. The horse died on Monday night, or early on the Tuesday morning.

The question arose as to where the wound was: he was unable to find any wound. Doubtless there had been a wound in the pharynx or mouth somewhere, to permit of the entrance of the causal vibrio.

Some time ago a discussion was held at the Society regarding the deaths of some cattle, and a suggestion was made that the cause was malignant oedema. He asked then the question whether malignant oedema was seen in cattle, and he was assured that it was. He had, personally, never seen a case in cattle, and he found that Sir John M'Fadyean, in his lectures on pathology, said the disease did not occur in cattle. The disease could not be experimentally communicated to cattle. M'Fadyean said that the cases of malignant oedema recorded as occurring in cattle were associated with parturition, and the diagnosis was probably founded on erroneous judgment. He, the President, had seen the condition in the horse before, but affecting the quarters, not the head. In connection with the last case of the sort he saw, the field in which the horse was put had been top dressed with town manure, and the horse in rolling had cut himself with a broken soda-water bottle, and malignant oedema originated at the wound. Other cases of the condition followed the performance of castration, the wound becoming infected.

He related the case because instances of the condition were not common, and because the symptoms were not those usually met with.

He made several punctures into the large swelling on the left side of the face, and the resultant exudation was of the most intolerable odour he had encountered: it consisted of gas and a reddish fluid. It made the men feel unwell, causing vomiting movements. He had had no opportunity of doing a post-mortem examination.

Mr. WILLETT said that while the President was relating the case he thought of the possibility of its being erysipelas. In malignant oedema he thought there was always a breaking out on the skin.

The PRESIDENT said there could be no doubt about the diagnosis of the case, as he brought some of the discharge away and examined it at home. The bacillus was not difficult to find. It was supported by the gas and the kind of material which exuded.

REPRESENTATIVES ON THE NATIONAL VETERINARY ASSOCIATION.

Mr. ALMOND proposed, and Mr. THOMPSON seconded, the re-election of the following gentlemen:—Messrs. MacIntosh, Foreman, S. H. Slocock, J. Willett, Prof. Macqueen, and Mr. MacCormack as Hon. Secretary.

OTHER BUSINESS.

Mr. HEATLEY reported that three weeks ago he examined three horses for the London Guarantee and Accident Company, 20 Lincoln's Inn Fields. The horses belonged to a client of his, and he made a very careful examination for insurance purposes, and they successfully passed his examination. He charged half-a-guinea each, and the Company sent him 7s. 6d. for all three. This he returned to them, and told them he had the honour of belonging to the Society, and he would bring the matter before his colleagues. The postal order had not been returned. It was monstrous to expect a veterinary surgeon to examine horses for half-a-crown each. He made no previous arrangement as to the fee.

The PRESIDENT advised Mr. Heatley to put the facts before Mr. Toope, of the National Association, but expressed the opinion that if the fee was mentioned on the requisition of the Guarantee Company, there seemed to be no redress. Half-a-guinea seemed rather much to charge, for insurance purposes, and it was more than could be afforded. Still, as four shillings was common payment, 2s. 6d. was much too low.

Mr. WILLETT proposed, and Mr. ALMOND seconded, a cordial vote of thanks to the President for presiding, and it was carried.

HUGH A. MACCORMACK, Hon. Secretary.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

[NATIONAL V.M.A.—SOUTHERN BRANCH.]

(Concluded from page 572).

DISCUSSION.

Major CARLESS said he had had some little experience in this subject, and the first herd of cattle he treated with tuberculin was one of 80, when he was assisted by Sir John M'Fadyean. Five re-acted, and he had an opportunity of making a post-mortem examination on them, but so far as he could see there were no tubercles. He had been in the milk trade himself for 20 years, and always tested his own cows. On one occasion he was surprised to find seven out of 20 re-act badly, and in less than three months five out of the seven were dead—eaten up with tuberculosis. He hoped that after the war the Board of Agriculture would take this matter up again, because that was the only means of stamping it out properly. Unless there was some compensation, farmers would naturally send their re-actors to market, which made the eradication of the disease next to impossible. He knew dairymen in his own county who gave up testing because it was too dear. They got no more for the milk than the man who left it alone. He mentioned the case of a pedigree bull which he once bought, and although he passed the test at the time, most of the calves got by this bull re-acted.

Mr. GOLD said the admirable paper they had listened to left no room for adverse criticism, but he would like

to make one or two comments. Firstly, taking up the thread of Major Carless' last remark, he (Mr. Gold) had noticed in some herds how very easy it was to differentiate between the beasts got by a certain bull. He had two or three herds in his district in which he could trace 80% of the re-actors to certain bulls. He felt very strongly that the bull should be the one animal that should be made to pass the test. A cow only produced a calf once in a year, but not so the bull. Even if the bull did not actually transmit the disease, he transmitted some inherent weakness to his progeny by which that progeny was more liable to infection than other animals. He agreed that the tuberculin test was the only means at their disposal of stamping out the disease. In the very early stages of the disease it was impossible to pick infected animals out with the naked eye. He had noticed that when cows which had been lying out entirely were fetched in to be tested the reaction was not so pronounced as it might be. The fact of housing them had a tendency to make some of them show a rise in temperature. He sometimes came across cases, as no doubt most of them did, in which the test was somewhat misleading. In purchasing cows, the difficulty was to get them to pass what he called the second test. He was in favour of all recently purchased cows being separated from the others for at least a month or six weeks, and being subjected to a second test, which was always more reliable than the first. He was not disparaging the test in any way, but as a rule they blamed the dealer, whereas the dealer was not always to blame. When they found re-actors in a herd, it was not necessary to tell the owner what to do. The owner knew quite well: he sent them to the market, where they were bought by dealers, with the result that some of those cows passed the test, having only just been tested. That was why he contended that animals newly purchased should be kept separate for a few weeks and then re-tested. Stock owners who bred their own cattle were best off, and the danger began when through some cause or other it was necessary to buy from outside.

Mr. MARTIN followed up the argument as to the safety of the first test. He would like this question answered: If animals were doubtful at the first test, and they passed the second test in six weeks time, would they be safe? Why should there be a difference in the results of the two tests? He believed that healthy cows brought into towns, in course of time became infected if they took the stall of a tuberculous cow, unless the place was thoroughly disinfected. There was someone in his district who bought screw cows to feed the pigs on, and he had known those pigs ultimately get tuberculosis.

Mr. O'NEILL asked why the bull should be blamed so much for his progeny being tuberculous? It seemed to be an accepted fact that if one of the parents was to blame it was the bull.

Mr. FORSYTH said that in the country generally he found since the suspension of the Act interest was dying out, and things would soon be as bad as they were before. He was sorry to say that in his experience the tuberculin test had been a failure in country districts. Small farmers had not the accommodation to separate the animals properly. Often, too, when a beast reacted the owner had not the means of replacing it, and until some system of substantial compensation was introduced by the Government, he was afraid there was very little good to be done at present. He would like to know at what age they could get a good reaction. He had tested some young animals and the result had been rather satisfactory.

Mr. CORMACK said this was one of those extensive subjects which practitioners were all the better for having brought before them occasionally. It required a lot of attention in order to master it, and Mr. Malcolm had brought out a good many of the more important points which helped to refresh their memories. There

was one point he would like to emphasise, and that was the very important part which the character of the housing of cattle and milking cows had in the spread of tuberculosis. One sometimes found in what might be called second rate herds—herds which did not rank among the really first rate herds of the country—there was no sign of tuberculosis, especially when the animals were kept outside. When animals were constantly housed, the results were not so good. One also found that the number of reactors increased when the ventilation of the building was bad. That was his (Mr. Cormack's) experience, and he had no doubt it was the experience of most practitioners. Mr. Malcolm had referred to the work of Mr. Philp Mitchell, the result of whose work, when it first came out, rather startled the medical profession, because they had really very little idea that consumption in children, especially in the joints and glands, was caused to such an extent by their drinking cows' milk. He knew Dr. Mitchell's work to be very sterling, and they might safely accept his conclusions, notwithstanding that they were hotly contested by the German workers, who declared there was only a small percentage of consumption of bovine origin in children. As to the part the tuberculous bull played in the spread of the disease, is it not a fact that the male is supposed to impart a certain constitutional element to his progeny? If that were so, it would account for those cases mentioned by Major Carless and other speakers. He would like an expression of opinion on the question as to how late in the period of gestation could one expect to get a reliable reaction? Within a month of calving? Or later?

Mr. ISON thought the Association very fortunate in having a President both able and willing to step into a breach as Mr. Malcolm had done. He had given them a paper on a subject on which few veterinary surgeons were better qualified to speak. He (Mr. Ison) did a certain amount of testing, and the chief argument against it was the number of doubtful reactors. It rather induced scepticism in the owner as to the value of the test. Another thing which the owner looked at with doubtful eyes was that the height of the temperature was no guide at all to the extent of the infection. A cow which had just passed the border line might be badly infected, whilst another animal which ran up to an enormous temperature might have the disease only very slightly. As regards the test itself, the fact of animals being housed during the test, and perhaps in a very close atmosphere, undoubtedly added to the rise in temperature. It thus happened sometimes that a cow became a doubtful reactor which, in a cooler atmosphere, would probably pass the test all right. He mentioned a recent experience in regard to a mare. He thought she was suffering from tuberculosis, and when he submitted her to the test she went up to a very high temperature. He had her slaughtered, but could not find any trace of tuberculosis. He had sent her to the College, and was awaiting their report.

Mr. POWLEY commented on the fact that little stress had been laid on the conjunctival or intradermal modes of testing.

Mr. GOLD said he would endeavour to quote from his experience in that direction. In several instances he had been supplied with tuberculin for the eye test, and he must say that in his hands it had not always been reliable. He personally should not rely on the ophthalmic test. He had found the intradermal test a little more reliable, because one did get a distinct thickening of the skin or tissues where the injection was made. He injected as he had seen Sir John M'Fadyean do it, namely, in the thick folds near the anus. Personally, he should stick to the subcutaneous test.

Mr. MARTIN said there was one little matter he had omitted to mention. With reference to air space in cow sheds, he found there were more cases of tuberculosis

where cows were close up to a dead wall. He would rather have the extra air space in front of the animal than behind it or at the top.

Mr. MURRAY said his experience showed that cows sometimes gave tuberculous milk even when the animal itself did not appear to be badly infected. A mare which he once suspected of having tuberculosis did not react to the subcutaneous test, but it did to the ophthalmic test, and a post-mortem examination showed that she had tuberculosis.

The HON. SEC. said he wished especially to thank the President for his paper, as Major Taylor's inability to get away promised to leave them in a hole. The paper they had listened to was one they could not fail to appreciate. He (Mr. Dawes) had had some experience in the testing of cattle. A client of his had, after spending a lot of time, and trouble, and money, got a tubercle-free herd, but became disgusted when he found that he could not get any more for his milk. His client thought it unfair that a man who had done what he had done should get no more for his milk than the man who had not spent a halfpenny on seeing that his herd was free from disease. In that respect, he (Mr. Dawes) thought this country was behind other countries in not having State help. He did not think the benefits accruing from the tuberculin test would ever be fully realised till something more was done by the Government.

Mr. HEELIS thought the ophthalmic test in the case of mallein was a good one.

The PRESIDENT, replying to the discussion, dealt first with the remarks of Major Carless with regard to the effect of the bull on his progeny. He did not quite gather whether Major Carless regarded it as a case of heredity or whether it was that the progeny of a tuberculous bull merely inherited certain predisposing conditions of physical peculiarities. If the suggestion was that the progeny inherited tuberculosis from the male parent, he entirely disagreed with it, as he considered the disease solely contagious.

Major CARLESS: I simply stated the fact, and offered no opinion.

Mr. MALCOLM, continuing, said that as to selling reactors, he was afraid it was often done. It might happen that no harm resulted, but on the other hand they might be the means of spreading the disease in quarters which had previously been free from tuberculosis. He mentioned the cases of 40 or fifty reactors in a herd that came under his notice, which were fed off, and only one was ultimately condemned. Curiously enough, that one which was condemned was quite a good looking animal, and one which would least have been suspected. Reverting to the question of calves from bulls which proved tuberculous being themselves infected, it was a condition that many people had noticed, but he could not accept any other theory than that direct infection was the cause of tuberculosis in any animal. As to the relative merits of the eye test and the subcutaneous test, the latter was the more reliable in his own experience, and he would not be prepared to accept any other existing test in lieu of it. Mr. Martin had asked about the result of the second test, but it was not everyone who would like to certify in all such circumstances, that the animal had no tuberculosis. They could all agree with Mr. Martin as to the importance of plenty of good breathing space. Nothing had such a beneficial effect on a herd as plenty of pure air, and the majority of cases where herds had been tubercle-free without any previous test had been cases where the animals had been living out of doors. It had been asked how soon and how readily cows that were reactors were capable of infecting other cows in a close shed. It used to be thought that only clinical tuberculosis was capable of spreading, but it was known now that if we put animals that were reactors in a shed that was otherwise

tubercle-free, one or more of the reactors were certain very soon to infect some of the others.

The only thing one could do to eradicate tuberculosis was to fall back on the tuberculin test. No doubt it is a good thing, and a step in the right direction, to exterminate the clinicals. The latter were the most dangerous to others; but with better provision for housing there was no reason why the reactors should not be kept apart from the free, and why as many of the old ones that had become reactors should not be got rid of as soon as possible. As to the age at which to test young animals, he had tested them at six months quite satisfactorily. There was a different temperature in the case of young animals to what there was in older ones, but subject to a reasonable measure of precaution there was no reason why calves should not be tested early: in fact, he thought it was a good thing to test calves early, and if there was a single one doubtful it ought to be put on one side. Mr. Cormack referred to the best herds, by which he understood him to mean the pedigree herds, being the worst reactors; that was his (Mr. Malcolm's) experience. He was very glad to hear Mr. Cormack speak of Dr. Mitchell's work in the way he did. As Mr. Ison said, there was no relation in the extent of the reaction to the extent of the disease. He agreed with those speakers who said that bad ventilation helped to send up the temperature of animals that had been submitted to the test. He thought many of the doubtful reactors, if tested under more perfect conditions, would never react at all. It was his experience that the test was more reliable before calving than after. A fortnight before calving he thought a good many animals passed the test all right, but a fortnight after, the test was not so reliable, and within a week after it was even less reliable.

On the motion of the Hon. Sec., seconded by Major Carless, the President was thanked for his paper, and requested to consent to its being published with the report of the meeting.

DISLOCATION OF THE HIP.

Mr. FORSYTH produced for inspection a quaint post-mortem specimen of dislocation of the hip. The animal, a pony at a colliery, yielded to treatment and returned to work, but was badly deformed. A further accident led to its being destroyed, and the appearance of the joint was so remarkable that he had preserved this specimen. The members were greatly interested in the case, and the President took the opportunity of remarking that he wished every member who came across anything unusual in his practice would bring the case before the Association for the instruction of others.

H. J. DAWES, F.R.C.V.S., Hon. Sec.

THANKS TO ELECTORS.

To the Editor of The Veterinary Record.

Dear Sir,—May I be permitted, through the medium of your valuable journal, to express my sincere thanks to those gentlemen who honoured me with their votes at the recent election to the Council of the R.C.V.S.

Faithfully yours,

Belfast, 19th June.

F. W. EMERY.

Sir,—I should like to convey my thanks to those members of the Profession who voted for me at the recent Council election. I trust that my work on the Council may merit the confidence that has been placed in me.—Yours faithfully,

Vety. Dept., City Chambers,
Edinburgh, 20th June.

A. GORTON.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders† (including Farcy)		Parasitic Mange.		Sheep Scab.	Swine Fever.	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Out-breaks.	Slaugh-tered. *
IRELAND. Week ended May 13	...	...	...	...	...	...	Outbreaks	...	4	9	19
Corresponding Week in {	1915 ...	...	...	...	...	...	1	...	4	8	41
	1914 ...	...	3	43	...	...	1	...	2	...	13
	1913 ...	...	...	...	...	...	1	...	11	1	3
Total for 20 weeks, 1916	2	6	...	...	...	...	29	...	211	119	615
Corresponding period in {	1915 ...	1	1	...	1	3	18	...	230	116	700
	1914 ...	1	1	73	830	...	41	...	324	98	456
	1913 ...	...	...	...	...	...	83	...	278	62	381

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, May 15, 1916.

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection

PARLIAMENTARY.

In the House of Commons, Wednesday, June 21st.

FINANCE BILL: MOTOR CAR LICENCES.

On Clause 11 (Increased duty on licences for motor cars),

Mr. MONTAGU asked leave to withdraw the clause. He stated that in originally putting the clause in the Bill, the Government desired that there should be a reduction in the unnecessary use of motor-cars, and as a result a reduction in the use of petrol. They sought to effect that object by the imposition of a very heavy duty, hoping they would thereby succeed in reducing the number of licenses taken out. Since the Budget was introduced a new departure had been made by the Government which would enable the Treasury to achieve the same object in a fairer way. The Petrol Control Committee appointed by the Board of Trade intended, he understood, to introduce a central control of petrol stocks, which were to be distributed only under permits issued by the central authority. They were now obtaining from consumers the average of their past consumption and estimates of future consumption. On those estimates they would issue a permit to each consumer entitling him to purchase a specified number of gallons of petrol for a specified purpose and for a specified period. It was proposed that, in order to get a permit from the Petrol Control Committee, the consumer should have to pay a licence duty of 6d. for every gallon which the permit enabled him to obtain. If he did not take the quantity of petrol out in the time, he would be entitled to a refund. Commercial cars, doctors' cars, and cars used by veterinary surgeons would get their permits at half rates. A new resolution embodying the scheme would be introduced to-morrow.

Mr. JOYNSON-HICKS took the opportunity to rebut the allegation that the community of motor-car users had been making improper use of their cars during the war. It was true to say that 99 per cent. of pleasure motoring had ceased. The two great associations of motor-car users had made most careful inquiries of their members, of county surveyors, recruiting officers, and directors of the Red Cross and voluntary aid Societies, and they all testified to the excellent work motorists had done during the war for the public, the State, and wounded soldiers and sailors. There was no county which had not gladly done its share in this work. He welcomed the new proposals as being much fairer, but even so he thought they should have to ask the Chan-

cellor for some statement in regard to cars used for public purposes.

Sir R. FINLAY (Edinburgh and St. Andrews Universities, U.) remarked that the Government's proposal seemed to involve that surgeons and veterinary surgeons should be entitled to the abatement of one-half of the duty upon cars granted to doctors under the existing law. There was a strong case for a similar abatement being granted to clergymen, of whom he knew one who had a parish 60 miles long.

Sir F. BANBURY (City of London, U.) remarked that that if the suggestions which had been made were adopted there would be no revenue from the tax. He agreed that doctors and veterinary surgeons should be granted an abatement; their work was to alleviate suffering; but local authorities often caused suffering (lfr).

Mr. MONTAGU suggested that it would be better to keep separate the consideration of the permanent and temporary taxation on motor-cars. There were certain taxes on motor-cars which formed part of the ordinary revenue. But the tax now under consideration might be called a supertax on motor cars for the duration of the war only. It was proposed to levy it in its new form by a temporary body, which would issue permits under the Defence of the Realm Acts.

Question: "That the clause stand part of the Bill," put, and negatived.

ARMY VETERINARY SERVICE

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, June 16.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temp. Lts.:—H. Dyson (June 1); T. A. Hubbard F.R.C.V.S. (June 2).

June 17.

Lieut. H. Sproston, from 31st Can. Inf. Bn., to be temp. Lieut., Canadian A.V.C. (May 27).

June 19.

Lieut. to be temp. Capt.:—J. T. Evans (June 3).

June 21.

Temp. Lieut. M. McPhatter relinquishes his commn. on term. of his engagement (June 12).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

June 17.

To be Lieut.:—J. Robertson (June 1).

June 19.

Capt. J. E. L. Still to be A.D.V.S., and granted temp. rank of Major whilst so employed (May 1).

June 15.

The following dispatch has been received by the Secretary of State for War :—

General Headquarters, April 30.

Sir,—I have the honour to forward herewith the names of those under my command whom I wish to bring to notice for gallant and distinguished conduct in the field.

I have the honour to be, Sir, your obedient servant,
D. HAIG, General, Commander-in-Chief
The British Forces in France.

ARMY VETERINARY CORPS (T.F.)

Capt. T. A. B. Cocksedge, Capt. T. Craig, Capt. J. A. Shaw, Capt. T. Thomson, Sgt. H. Dawson, N.M. 199, Cpl. P. Edwards, N.M. 165.

CANADIAN ARMY VETERINARY CORPS.

Capt. C. G. Saunders, Sgt.-Maj. A. J. Shirt, 48501.

INDIAN SUBORDINATE VETERINARY DEPT.

Lal. Babu (Clerk to D.D.V.S., Indian Cavalry Corps.)

DEFENCE OF EGYPT—OFFICIAL DISPATCHES.

Major-General Sir A. Wilson makes the following recommendations :—

HEADQUARTERS STAFF.

* * * *

Major H. Mason, Insp. Vet. Serv. Egyptian Min. of Agriculture.

General Maxwell makes the following recommendations :—

* * * *

Capt. M. Henry, Australian Army Vety. Corps.
Lt.-Col. A. R. Young, N.Z. Vety. Corps.
Local and temp. Capt. Annesley De R. Gordon, Egypt. Vety. Serv.

EGYPTIAN SERVICE HONOURS.

The King has granted authority for the wearing of the following decorations :—

THIRD CLASS OF THE ORDER OF THE NILE.

* * * *

Major F. U. Carr, A.V.C., Principal Veterinary Officer, Egyptian Army.

The following casualties are reported :—

WOUNDED—Capt. W. L. Sheffield.

DIED—Lieut. and Qmr. J. King.

OBITUARY.

T. EDWARD AUGER, M.R.C.V.S., Wymondham, Norfolk.
Graduated, Lond : April, 1870.

Mr. Auger's death occurred on June 16th, aged 68.

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donations are reported :—

M. Clarkson, Richmond, Yorks	£1 1 0
C. Galloway, Thames Ditton	5 0 0
J. K. Grainger, Lt.-Col. A.V.C.	1 1 0
D. C. Greene, Capt. A.V.C.	1 1 0
Previously reported	193 18 3

Total £202 1 3

SUBSCRIPTIONS TO R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following subscriptions for 1916 to the College funds :—

H. Andrew, London	£1 1 0
G. Atkinson, Capt. A.V.C.	1 1 0
L. A. Auchterlonie, Capt. A.V.C.	1 1 0
W. J. Bambridge, Capt. A.V.C.	1 1 0
D. Blyth, Capt. A.V.C.	1 1 0
A. C. Burton, Capt. A.V.C.	1 1 0
A. J. Cattell, Brecon	1 1 0
M. Clarkson, Richmond, Yorks	1 1 0
D. G. Davies, Capt. A.V.C.	1 1 0
A. F. Dykes, Capt. A.V.C.	1 1 0
J. T. Edwards, Capt. A.V.C.	1 1 0
T. J. Faithfull, Capt. A.V.C.	1 1 0
W. G. Forbes, Kilmarnock	1 1 0
D. Forwell, Towcester	1 1 0
J. R. Greig, Leith, Edinburgh	1 1 0
C. B. M. Harris, Lt.-Col. A.V.C.	1 1 0
P. Howard, Lieut. A.V.C.	1 1 0
E. H. Leach, Newmarket	1 1 0
H. A. MacCormack, London	1 1 0
J. A. McMenamin, Capt. A.V.C.	1 1 0
J. Macqueen, London	1 1 0
C. A. Murray, Major A.V.C.	1 1 0
B. J. W. Nicholas, Capt. A.V.C.	1 1 0
W. A. Pallin, Major A.V.C.	5 0 0
W. W. Pegg, Biggar, Lanark	1 1 6
J. D. Pott, Greenock	1 1 6
J. Preston, Mallow, Co. Cork	1 1 0
W. Roots, London	1 1 0
C. J. C. Ryan, Capt. A.V.C.	1 1 0
M. T. Sadler, Capt. A.V.C.	1 1 0
E. T. Stanley, Dulwich Village	1 1 0
C. E. Steel, Major A.V.C.	1 1 0
J. R. Steevenson, Major A.V.C.	1 1 0
R. J. Stow, Lieut. A.V.C.	1 1 0
L. M. Verney, Major A.V.C.	1 1 0
W. P. Weston, York	1 1 0
J. S. Wheatcroft, Rotherham	1 1 0
J. L. Williams, Capt. A.V.C.	1 1 0
J. H. Wright, Capt. A.V.C.	1 1 0
Previously acknowledged	500 19 6

£545 18 6

CORRECTION.—In the list of June 17th, the description "Lieut. A.V.C." was incorrectly given after the name of Mr. G. Whitehead, whose address should have been given as Batley, Yorks.

From Maurice Healy, Esq. (Cork City).

Grand Parade,
Cork, 30th May, 1916.

Dear Sir,—I quite agree that the argument in favour of treating veterinary surgeons on the same footing as doctors in the matter of motor spirit, is equally valid as regards the tax on motor cars, and if in the House when the amendment in this direction is moved, I shall have pleasure in voting for it.—Yours faithfully,
E. McSwiney, Esq., Cork.

MAURICE HEALY.

From J. Walsh, Esq. (Co. Cork, S.)

Eversleigh, Bandon,
Co. Cork, May 30th, 1916.

Dear Mr. McSwiney,
I am in receipt of yours of yesterday, re the amendment to the Finance Bill providing for a rebate or a repayment of half the licence duty on motor cars used by veterinary surgeons for professional purposes, which shall have my careful attention.—Yours sincerely,
J. WALSH.
E. McSwiney, Esq., M.R.C.V.S., Cork.

THE TAX ON MOTOR LICENCES.

Dolafon, Corwen.

Dear Sir,—The following Members of Parliament have promised their support to Mr. O'Connor's amendment:—

H. Haydn Jones, Esq. (Merioneth).
G. C. Rees, Esq. (Afron).
E. T. John, Esq. (Denbighshire, East).
Rt. Hon. Ellis J. Griffith, (Anglesey).

Yours truly,
19th June. HUGH O. RICHARD.

From Sir R. A. Cooper, Bart. (Walsall).

21 Carlton House Terrace, S.W.
May 31, 1916.

Dear Mr. Prickett,

I have received your notice with regard to the Finance Bill to which my attention has already been drawn by several of the members of the veterinary profession. You may be sure that I shall support to the full the point that you raise. I hope this letter finds you well.

Yours very truly,
G. F. Prickett, Esq., Walsall. R. A. COOPER.

From G. F. Hohler, Esq. K.C. (Chatham).

3 Harcourt Buildings,
Temple, E.C.
20th June.

Dear Sir.—I shall be pleased to support the amendment.

Yours very truly,
Mr. Ebbets, Rochester. GERALD F. HOHLER.

The A.V.C. Comforts Fund.

Dear Sir,—I herewith have pleasure in forwarding to you further list of subscriptions and contributions received for A.V.C. Comforts Fund for favour of publication in your next issue.

I would like to again take the opportunity to ask that all woollen articles may be sent in as early as possible next winter. Owing to my absence from home during the month of August, I shall be glad if parcels can be withheld, and forwarded to me only after 1st. Sept.

Yours truly,

ADELAIDE M. MOORE.

Strathyre, Parsifal Road,
Hampstead, N.W.

List of contributions received since last published list:—

per Major R. C. Cochrane, A.V.C., from Reserve Fund, Vety. Hsptl., Bulford	£30	0	0
Mrs. Rider, Beamish	1	1	0
per Major Arnold Perritt, subscribed by A.V.C. men, Vety. Hospital Preston	1	14	0
per Col. E. Taylor, from Major Elliott, 2nd London Divl. Vety. Hosptl. (proceeds of concert)	20	1	10
Mr. Sydney Slocock (F.)	5	5	0
Major H. C. Dibben, A.V.C., Salonika	3	3	0
Miss Walker, Alton	10	0	0
Mr. E. A. Ryan, Ireland	3	3	0
Capt. J. H. Wright, A.V.C. (T.)	2	2	0
Mrs. E. Edwards	5	0	0

Parcels received from—

Mrs. Rutherford, Mrs. Hibbard, Mr. MacKenzie,
Mrs. Baird, Mrs. Fearnside.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.		Out-breaks	Slaughtered.*
	(a)		(a)		(b)		(b)		(b)	(a)	
GR. BRITAIN.											
Week ended June 17	8	9			1	2	18	45		96	271
Corresponding week in											
1915 ...	9	10			4	13	26	40		123	492
1914 ...	21	22			1	14	32	46		87	1100
1913 ...	9	10			2	6	29	46		58	510
Total for 25 weeks, 1916 ...	308	365	1	24	24	66	1472	3426	173	2495	7811
Corresponding period in											
1915 ...	351	389			23	37	1398	1867	156	2212	10234
1914 ...	434	462	11	74	49	130	1348	2407	145	2096	21323
1913 ...	315	340			83	237	1623	3311	121	1174	16605

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked:—London 1, Stafford 1. Board of Agriculture and Fisheries, June 20, 1916. Excluding outbreaks in army horses.

IRELAND. Week ended June 10		...	...	...	...	...	...	Outbreaks 2	1	7	51
Corresponding Week in	1915 ...	...	...	...	...	...	...	1	2	2	14
	1914 ...	...	...	1	14	...	...	1	2	6	27
	1913 ...	...	...	...	...	...	...	2	4	5	25
Total for 24 weeks, 1916		...	2	6	...	...	...	33	215	145	783
Corresponding period in	1915 ...	1	1	...	...	1	3	31	247	133	787
	1914 ...	1	1	75	955	...	...	47	338	113	579
	1913 ...	...	...	...	...	...	...	90	295	80	480

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, June 11, 1916

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection

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